PCM-9377

3.5" SBC with VIA Mark, VGA/ LCD/LVDS/LAN/USB

User Manual

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This manual is for the PCM-9377.

Part No. 2006937710 1st Edition

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Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 PCM-9377 SBC
- 1 Startup manual
- 1 Utility CD
- 1 mini jumper pack p/n: 9689000002
- 1 Audio cable p/n: 1703100152
- 1 IDE 44 pin cable p/n: 1701440351
- 1 USB 2 port Cable p/n: 1703100121
- 1 Parallel port cable p/n: 1700060202
- 1 Keyboard/Mouse cable p/n: 1700060202
- 1 x COM2 cable p/n: 1701140201

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Model No. List	Description
PCM-9377F-M0A1E	3.5" SBC w/VIA Mark 533, VGA/LCD/LVDS/LAN
PCM-9377F-Q0A1E	3.5" SBC w/VIA Mark 800, VGA/LCD/LVDS/LAN

Additional Information and Assistance

1.Visit the Advantech web site at **www.advantech.com** where you can find the latest information about the product.
2.Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
•Product name and serial number
•Description of your peripheral attachments
•Description of your software (operating system, version, application software, etc.)
•A complete description of the problem
•The exact wording of any error messages

FCC

This device complies with the requirements in part 15 of the FCC rules: Operation is subject to the following two conditions:

1.This device may not cause harmful interference, and

2.This device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense. The user is advised that any equipment changes or modifications not expressly approved by the party responsible for compliance would void the compliance to FCC regulations and therefore, the user's authority to operate the equipment.

Caution!

Achtung!

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions

Contents

CHAPTER 1

General Information

This chapter gives background information on the PCM-9377.

Sections include:

- Introduction
- Features
- Specifications
- Board layout and dimensions

Chapter 1 Introduction

1.1 Introduction

The PCM-9377 is a fanless, cost-effective, performance 3.5” Biscuit board geared to satisfy the needs for various industrial computing equipment. PCM-9377 is ideal for transportation, communication and gaming application that require flat panel support using digital display with TTL or LVDS interface or TV-out solution.
For those who want superior performance for various low-power embedded application and PC/104 expansion slot, PCM-9377 uses an VIA Mark CPU processor clocked at 533 MHz and 800 MHz, in conjunction with graphic controller and DRAM memory through one SODIMM socket. PCM-9377 offers convenient connector layout, easy assembly, multiple I/O and include 10/100 Mbps Ethernet, 4 USB 2.0(Universal Serial Bus), 2 serial ports, miniPCI socket for USB expansion or wireless application, and fully ISA support by PC/104 connector for easy system expansibility.

1.2 Features

- VIA Mark 533/800 MHz Processor
- Supports 18-bit TTL and LVDS LCD display and TV-out
- Supports miniPCI type III and PC/104 for expansion
- Supports 8-bit GPIO and hardware Monitor detection
- Coast line (external connector layout) same as PCM-9373

1.3 Specifications

1.3.1 Standard 3.5" Biscuit SBC Functions

- **CPU:** Embedded VIA Mark CoreFusion 533/800 MHz processor, 128 MB L1 cache memory on die
- **System Memory:** SDRAM 144-pin SODIMM x 1, Max. 512 MB with both PC100 and PC133 memory type
- **2nd Cache Memory:** 64 KB on the processor
- **System Chipset:** VIA Mark 533/800 processor
- **BIOS:** AWARD 2Mbit Flash BIOS

- **Watchdog timer:** 1~62 sec, 62-level time intervals system reset or IRQ11
- **Expansion Interface:** PC/104 and miniPCI type III
- **Battery:** Lithium 3V/196 mAH
- **Power management:** ACPI supported
- **Enhanced IDE interface:** One channels supports up to two EIDE devices. BIOS auto-detect, PIO Mode 3 or Mode 4, supports UDMA 33/66 mode
- **Serial ports:** Two serial RS-232 ports, COM1: RS-232, COM2: RS-232/422/485
- **Parallel port:** One parallel port, supports SPP/EPP mode
- **Keyboard/mouse connector:** Supports one standard PC/AT keyboard and a PS/2 mouse
- **Audio:** Support AC97 Audio stereo sound
- **USB:** Four USB 2.0 compliant universal serial bus ports
- Solid State Disk (SSD) Supports one 50-pin socket for CFC type I/II

1.3.2 VGA/LVDS Interface

- **Chipset:** VIA Mark processor
- **Memory Size:** 8/16/32 MB frame buffer using system memory
- **Resolution:** Support for all resolutions up to 1600 x 1200
- **Panel type**

  CRT panel

  LCD panel**:** Support for 18, 24, 36-bit TTL TFT LCD panels

  LVDS Interface: 2-Channel (2 x 18-bit) LVDS interface

  TV-out (optional): Support both NTSC/PAL, S-video and Composite Video via PCM-232 TV-out module (with optional BIOS)
- **Dual Independent Display:** N/A. With dual simultaneous display for CRT + LVDS, CRT + TTL, CRT + TV-out (w/PCM-232)

1.3.3 Ethernet Interface

- **Chipset supports:** Realtek RTL8100
  Intel 82551ER (Optional)
- **Connector:** One RJ-45 connector
- Standard IEEE 802.3u (100 Base-T) protocol compatible

1.3.4 Audio Function

- **Audio controller:** Realtek ALC650 chipset, supports AC97 3D Audio stereo sound
- **Audio interface:** CD in, Microphone in, Line in, Line out, Speak out

1.3.5 OS support

- This board supports DOS, Win2000, WinXPe, Win CE, WinXPe.

- For further information about OS support for this board, visit the following web resource Advantech: website: www.advantech.com or please contact technical support center

1.3.6 Mechanical and Environmental

- **Dimensions:** 145 x 102 mm (5.9"x 4.2")
  Mechanical Drawing (dxf file) is available.
- **Power Supply Type:** AT/ATX
- **Power Supply Voltage:** +5 V ± 5%, +12 V ± 5%, or supports single +5 V power only
- **Power Consumption:**
  Max: 2.72 A @ +5 V (with 256 MB DRAM, VIA Mark 800)
  Typical: 2.02 A @ +5 V (with 256 MB DRAM, VIA Mark 800)
- **Operating temperature:** 0 ~ 60°C (32 ~ 140°F)
- **Operating Humidity:** 10% ~ 90% relative humidity, non-condensing
- **Weight:** 0.85 kg (reference weight of total package)

1.4 Board layout: dimensions

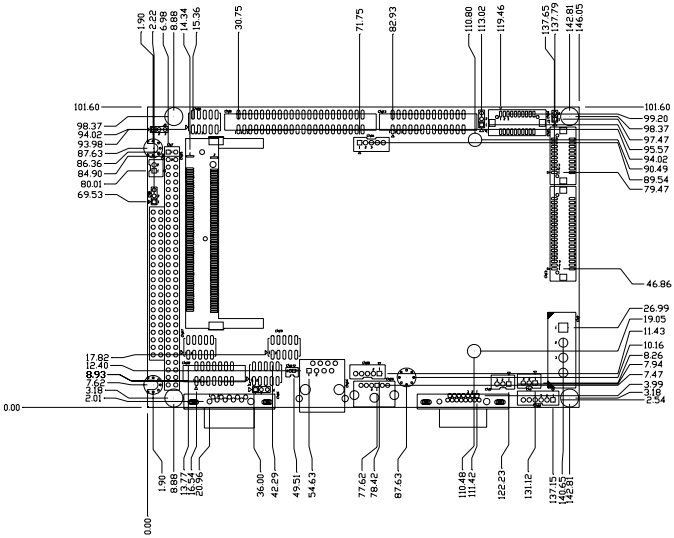


Figure 1.1: Board layout: Dimensions (Component Side)

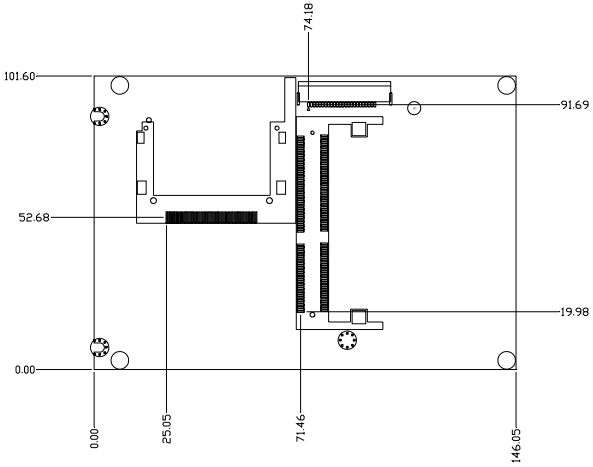


Figure 1.2: Board layout: Dimensions (Solder Side)

CHAPTER 2

Installation

This chapter explains the setup procedures of the PCM-9377 hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all safety precautions before you begin the installation procedure.

Chapter 2 Installation

2.1 Jumpers

The PCM-9377 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

Table 2.1: Jumpers

Label	Function
J1	Clear CMOS
J2	LCD Power
J3	TV Enable
J4	COM2 & WDG Select
J5	Audio Power

2.1.1 Clear CMOS (J1)

Table 2.2: Clear CMOS (J1)

Setting	Function
1-2*	BAT
2-3	Clear CMOS

*: default

2.1.2 LCD Power (J2)

Table 2.3: LCD Power (J2)

Setting	Function
1-2	+5 V
2-3*	+3.3 V

*: default

2.1.3 TV Enable (J3)

Table 2.4: TV Enable (J3)

Setting	Function
Close	TV-Enable
Open*	TV-Disable

*: default

2.1.4 COM2 & WDG Select (J4)

Table 2.5: COM2 & WDG Select (J4)

Setting	Function
1-2	RS485
3-4	RS422
5-6*	RS232
7-8*	Reset System
9-10	Clear IRQ11

*: default

2.1.5 Audio Power (J5)

Table 2.6: Audio Power (J5)

Setting	Function
1-2*	+12 V
2-3	+5 V

*: default

2.2 Connectors

On-board connectors link the PCM-9377 to external devices such as hard disk drives, a keyboard, or floppy drives. The table below lists the function of each of the board's connectors.

Table 2.7: Connectors

Label	Function
CN1	Stand-by Power Input
CN2	Power Input
CN3	SODIMM (H: 5.6mm)
CN4	Power Switch
CN5	CPU_FAN
CN6	External Battery
CN7	PC104
CN8	ISA -5 V & -12 V Input
CN9	CF (Compact Flash)
CN10	IDE

Table 2.7: Connectors	
CN11	Slim FDD (Floppy Disk Drive)
CN12	HDD & Power LED
CN13	LCD Connector1
CN14	LVDS Connector
CN15	LCD Connector2
CN16	Inverter Power
CN17	VGA
CN18	IrDA (SIP)
CN20	Keyboard/ Mouse
CN21	COM1
CN22	COM2
CN23	Print Port
CN24	LAN1
CN25	miniPCI type III
CN26	Audio
CN27	GPIO
CN28	SMBus
CN29	USB1/2
CN30	USB3/4

2.3 Locating Connectors

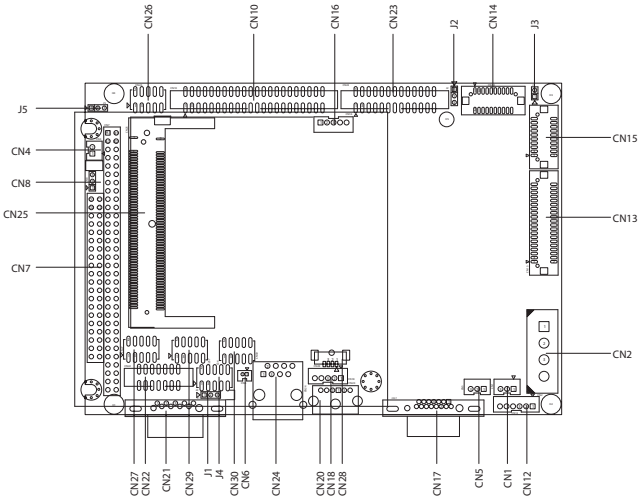


Figure 2.1: Connectors (component side)

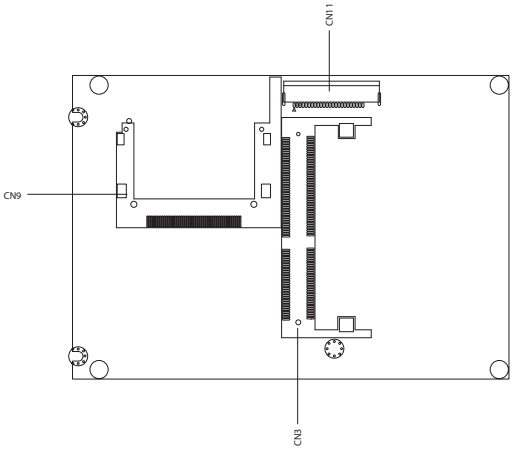
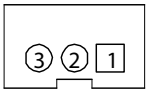
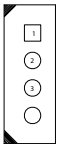
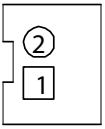
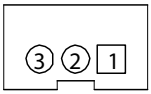
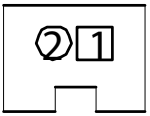
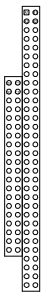
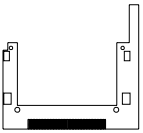
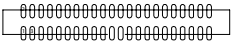
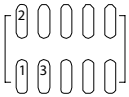
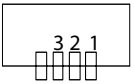
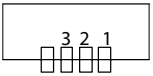
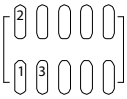
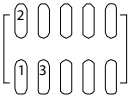
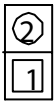
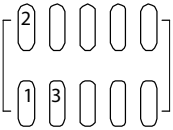


Figure 2.2: Connectors (solder side)

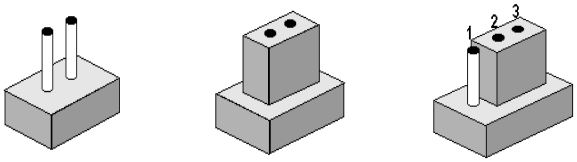
Location	Dimension	Location	Dimension
CN1		CN2	
CN3		CN4	
CN5		CN6	
CN7		CN8	
CN9		CN10	

CN11		CN12	
CN13		CN14	
CN15		CN16	
CN17		CN18	
CN20		CN21	
CN22		CN23	
CN24		CN25	

CN26		CN27	
CN28		CN29	
CN30		J1	
J2		J3	
J4			

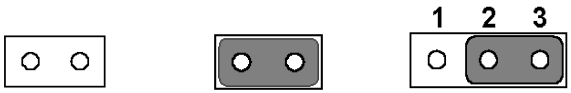
2.4 Setting Jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.



open closed closed 2-3

The jumper settings are schematically depicted in this manual as follows:.



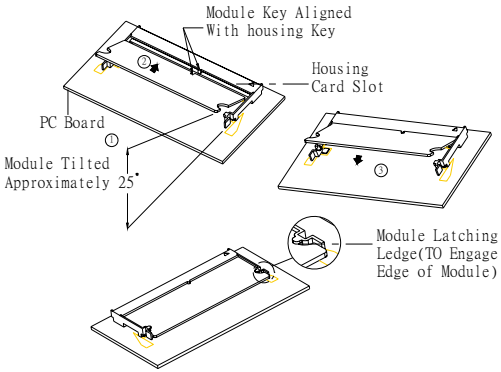
open closed closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

Generally, you simply need a standard cable to make most connections.

2.5 Installing SO-DIMM



The procedures for installing SODIMMs are described below. Please follow these steps carefully. You can install SDRAM memory modules using 200-pin SODIMMs (Small Outline Dual In-line Memory Modules).

1. Ensure that all power supplies to the system are switched off.

2. Tilt the SODIMM card approximately 25° above the board, and move it in the direction of the housing card slot. Make sure that the key in the module and the key in the housing are aligned.

3. Push the module into the socket until the module bottoms. There should be a slight insertion force to engage the module into the contacts.

2.6 IDE, CDROM hard drive connector (CN10)

The board provides 1 IDE channels which you can attach up to two Enhanced Integrated Device Electronics hard disk drives or CDROM to the board's internal controller. Its IDE controller uses a PCI interface. This advanced IDE controller supports faster data transfer, PIO mode 3, mode 4 and up to UDMA33.

2.6.1 Connecting the hard drive

Connecting drives is done in a daisy-chain fashion. This package includes One 44PIN IDE cable that can connect to 1.8" and 2.5" drives.

1. Connect one end of the cable to Hard Drive connector. Make sure that the red (or blue) wire corresponds to pin 1 on the connector, which is labeled on the board (on the right side).
2. Plug the other end of the cable into the Enhanced IDE hard drive, with pin 1 on the cable corresponding to pin 1 on the hard drive. (See your hard drive's documentation for the location of the connector.)

If desired, connect a second drive as described above.

Unlike floppy drives, IDE hard drives can connect to either end of the cable. If you install two drives, you will need to set one as the master and one as the slave by using jumpers on the drives. If you install only one drive, set it as the master.

2.7 Solid State Disk

The board provides a CompactFlash™ card type II socket and type I for optional socket.

2.7.1 CompactFlash (CN29, CN30)

The CompactFlash card shares a secondary IDE channel which can be enabled/disabled via the BIOS settings.

2.8 Parallel port connector (CN23)

Normally, the parallel port is used to connect the card to a printer. The board includes a multi-mode (ECP/EPP) parallel port accessed via CN23 and a 26-pin flat-cable connector. You will need an adapter cable if you use a traditional DB-25 connector. The adapter cable has a 26-pin connector on one end, and a DB-25 connector on the other.

The parallel port is designated as LPT1, and can be disabled or changed to LPT2 or LPT3 in the system BIOS setup.

You can select ECP/EPP DMA channel via BIOS setup.

2.9 Keyboard and PS/2 mouse connector (CN20)

The board provides a keyboard connector that supports both a keyboard and a PS/2 style mouse. In most cases, especially in embedded applica-

tions, a keyboard is not used. If the keyboard is not present, the standard PC/AT BIOS will report an error or fail during power-on self-test (POST) after a reset. The PCM-board's BIOS standard setup menu allows you to select "All, But Keyboard" under the "Halt On" selection. This allows no-keyboard operation in embedded system applications, without the system halting under POST.

2.10 Power & HDD LED Connector

2.10.1 Power & HDD LED Connector(CN12)

The HDD LED indicator for hard disk access is an active low signal (24 mA sink rate). Power supply activity LED indicator.

2.10.2 Power Reset button (CN4)

Momentarily pressing the reset button will activate a reset. The switch should be rated for 10 mA, 5 V.

2.11 Power connectors

2.11.1 Peripheral power connector, -5 V, -12 V (CN8)

Supplies secondary power to devices that require -5 volts and -12 volts

2.11.2 Main power connector, +5 V, +12 V (CN2)

Supplies main power to the board (+5 V), and to devices that require +12 V.

2.11.3 ATX Feature connector (CN1)

The PCM-9377 can support ATX power supply by CN1 connector.

Note.: Be sure that the ATX power supply can take at least a 10 mA load on the 5 V standby lead (5VSB). If not, you may have difficulty powering up your system.

2.11.4 CPU Fan power supply connector (CN5)

Provides +5 V power supply to CPU cooling fan.

2.12 Audio interfaces (CN26)

2.12.1 Audio connector

The board provides all major audio signals on a 10-pin cable connector, These audio signals include CD in, Speaker out, Microphone in, Line in and Line out.

2.12.2 Audio power source setting (J5)

The board is designed to work with a single +5 volts power supply as audio interfaces usually function under +5 volts. However, most audio controllers require an independent +12 volts power source since this avoids noise interference from other digital circuits. By using J5, the board's audio interface can also accept +12 V power sources for improved audio quality. Configuration of the audio interface is done completely via software utilities. You don't have to set any jumpers. For further information, please refer to Chapter 5 for audio setup details.

Table 2.8: Audio Power (J5)

Setting	Function
1-2*	+12 V
2-3	+5 V

*: default

2.13 COM port connector (CN21,CN22)

The board provides two serial RS-232 ports in one DB-9 connector and one box header with auto-flow control. It provides connections for serial devices (a mouse, etc.) or a communication network. You can find the pin assignments for the COM port connector in Appendix C.

2.13.1 Serial Port RS-422/485 (J4)

Serial port can be configured to operate in RS-422 and RS-485 mode. This is done via setting jumper J4.

Table 2.9: COM2 & WDG Select (J4)

Setting	Function
1-2	RS485
3-4	RS422
5-6*	RS232
7-8*	Reset System
9-10	Clear IRQ11

*: default

2.14 VGA/LCD/LVDS interface connections

The board's PCI SVGA interface can drive conventional CRT displays and is capable of driving a wide range of flat panel displays.

2.14.1 CRT display connector (CN17)

The CRT display connector is a 15-pin D-SUB connector used for conventional CRT displays.

2.14.2 Flat panel display connector (CN13)

CN13 consists of a 40-pin connector which can support a 24-bit LCD panel with Hirose connector no. DF13A-40DP-1.25 V. The board provides a bias control signal on CN13 that can be used to control the LCD bias voltage. It is recommended that the LCD bias voltage not be applied to the panel until the logic supply voltage (+5 V or +3.3 V) and panel video signals are stable. Under normal operation, the control signal (ENAVEE) is active high. When the PCM-9377's power is applied, the control signal is low until just after the relevant flat panel signals are present. CN13 can connect up to 24 bit TFT LCD.

2.14.3 Extension flat panel connector (CN15)

CN15 consists of a 20-pin Hirose's connector no. DF13A-20DP-1.25V. The PCM-9377 supports a 36-bit LCD panel which must be connected to both the CN13 (40-pin) and the CN15 (20-pin). The pin assignments for both CN13 and the CN15 can be found in Appendix C.

2.14.4 LVDS LCD panel connector (CN14)

The board uses VIA Mark chipset that supports 2 channel (2 x 18 bit) LVDS LCD panel displays. Users can connect to either an 18-bit or 36-bit LVDS LCD with CN14.

2.15 Ethernet configuration

The board is equipped with two high performance 32-bit PCI-bus Ethernet interface which is fully compliant with IEEE 802.3U 10/100Mbps standards. It is supported by all major network operating systems.

2.15.1 100Base-T connector (CN24)

100Base-T connections are made via one RJ-45 connector and one internal 10-pin box header.

2.16 Watchdog timer configuration

An on-board watchdog timer reduces the chance of disruptions which EMP (electro-magnetic pulse) interference can cause. This is an invaluable protective device for standalone or unmanned applications. Setup involves one jumper and running the control software.

2.16.1 Watchdog timer action (J4)

When the watchdog timer activates (CPU processing has come to a halt), it can reset the system (J4, pin7,8 enable) or generate an interrupt on IRQ (J4, pin9,10 enable). This can be set via setting J4 as shown below:

Table 2.10: COM2 & WDG Select (J4)

Setting	Function
1-2	RS485
3-4	RS422
5-6*	RS232
7-8*	Reset System
9-10	Clear IRQ11

*: default

2.17 USB connectors (CN29, CN30)

The board provides up to four USB (Universal Serial Bus) ports. This gives complete Plug and Play. The USB interfaces comply with USB specification Rev. 2.0 which supports up to 480Mbps transfer rate, and are fuse protected.

The USB interface is accessed through two 5 x 2-pin flat-cable connectors. You will need an adapter cable if you use a standard USB connector. The adapter cable has a 5 x 2-pin connector on one end and a USB connector on the other.

The USB interfaces can be disable in the system BIOS setup.

2.18 GPIO connector (General I/O Input Output) (CN27)

The board supports 8-bit GPIO through DI/O connector. The 8 digital inland outputs can be programmed to read or control devices, with input or output defined. The default setting is 4 bits input and 4 bits output.

2.19 TV-out interface (optional) (CN13, CN15, J3)

The board provides optional TV-out module PCM-232 via CN13, CN15 and J3 jumper. To enable TV-out function, please connect PCM-232 module to PCM-9377 board and setup J3 jumper as bellow table. This module output supports composite video and S-video connectors. TC-out generators use both NTSC and PAL formats with 640 x 480 or 800 x 600

resolution. To set up your video interface, please run the appropriate installation program located on the utility disk.

Table 2.11: TV Enable (J3)

Setting	Function
Close	TV-Enable
Open*	TV-Disable

*: default

2.20 Floppy drive connector (optional) (CN11)

You can attach up to two floppy drives to the PCM-9371.s onboard controller. You can use 3.5.(720 KB, 1.44 MB, and 2.88 MB) drives. A 26-pin FPC connector cable is required for a dual-drive system. On one end of the cable is a 26-pin FPC-cable connector. One the other end are two sets of floppy disk drive connectors. Each set consists of a 26-pin FPC-cable connector (usually used for 3.5. drives).

2.20.1 Connecting the floppy drive

1. Plug the 26-pin FPC-cable connector into CN11. Make sure that the red wire corresponds to pin one on the connector.

2. Attach the appropriate connector on the other end of the cable to the floppy drives (s). You can use only one connector in the set. The set on the end (after the twist in the cable) connects to the A: drive. The set in the middle connects to the B: drive.

If you are connecting a 3.5. floppy drive, you may have trouble determining which pin is number one. Look for a number printed on the circuit board indicating pin number one. In addition, the connector on the floppy drive may have a slot. When the slot is up, pin number one should be on the right. Check the documentation that came with the drive for more information. If you desire, connect the B: drive to the connectors in the middle of the cable as described above. In case you need to make your own cable, you can find the pin assignments for the board's connector in Appendix A.

2.21 IR connector (CN18)

The board provides an IrDA port for transfer rates of 115 kbps. This connector supports the optional wireless infrared transmitting and receiving

module, which is mounted on the system case. Configuration of the module is done through BIOS setup.

2.22 LCD power setting (J2)

The board's PCI SVGA interface supports 5 volts and 3.3 volts LCD displays. By changing the setting of J2, you can select the panel video signal level to be 5 V or 3.3 V. Configuration of the LCD type is done completely via the software utility. You do not have to set any jumpers. Refer to Chapter 4 for software setup details.

2.23 MiniPCI socket (CN25)

The board supports miniPCI socket type III, with height 7.95mm for wireless application.

2.24 SMBus (CN28)

SMBus is the System Management Bus and usually used it for low-speed system management communications. This Board supports SMBus for Advantech embedded API - SUSI (Secured and Unified Smart Interface). It allows a developer to interface a Windows XP or CE PC to a downstream embedded system environment and transfer serial messages using the SMBus protocols. You will be able to control multiple device simultaneously.

CHAPTER 3

Award BIOS Setup

Chapter 3 Award BIOS Setup

3.1 Introduction

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed memory (CMOS RAM) so that it retains the setup information when the power is turned off.

3.1.1 CMOS RAM Auto-backup and Restore

The CMOS RAM is powered by an onboard button cell battery. When you finish BIOS setup, the data in CMOS RAM will be automatically backed up to Flash ROM. If operation in harsh industrial environment cause a soft error, BIOS will recheck the data in CMOS RAM and automatically restore the original data in Flash ROM to CMOS RAM for booting.

Note: If you intend to change the CMOS setting without restoring the previous backup, you have to click on "DEL" within two seconds of the "CMOS checksum error..." display screen message appearing. Then enter the "Setup" screen to modify the data. If the "CMOS checksum error..."message appears again and again, please check to see if you need to replace the battery in your system.

3.2 Entering Setup

Turn on the computer and check for the "patch code". If there is a number assigned to the patch code, it means that the BIOS supports your CPU.

If there is no number assigned to the patch code, please contact Advantech's applications engineer to obtain an up-to-date patch code file. This will ensure that your CPU's system status is valid. After ensuring that you

have a number assigned to the patch code, press <Del> to allow you to enter the setup.

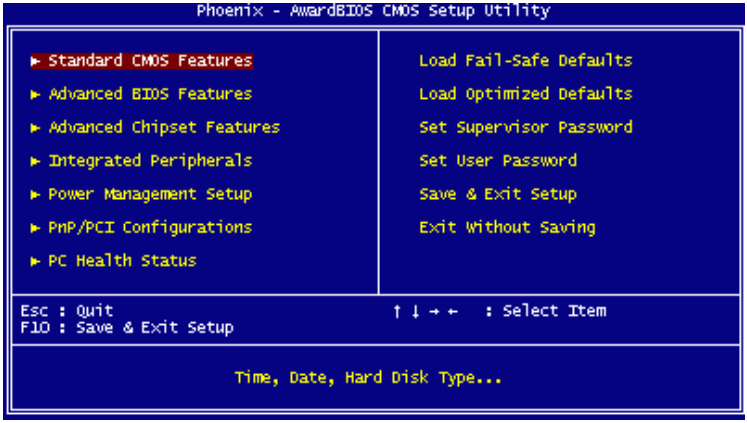


Figure 3.1: Award BIOS Setup initial screen

3.3 Standard CMOS Setup

Choose the "Standard CMOS Features" option from the "Initial Setup Screen" menu, and the screen below will be displayed. This menu allows users to configure system components such as date, time, hard disk drive, Video, Halt On, display, and memory.

3.4 Advanced BIOS Features

The "Advanced BIOS Features" screen appears when choosing the "Advanced BIOS Features" item from the "Initial Setup Screen" menu. It allows the user to configure the board according to his particular requirements. Below are some major items that are provided in the Advanced BIOS Features screen. A quick booting function is provided for your con-

venience. Simply enable the Quick Booting item to save yourself valuable time.

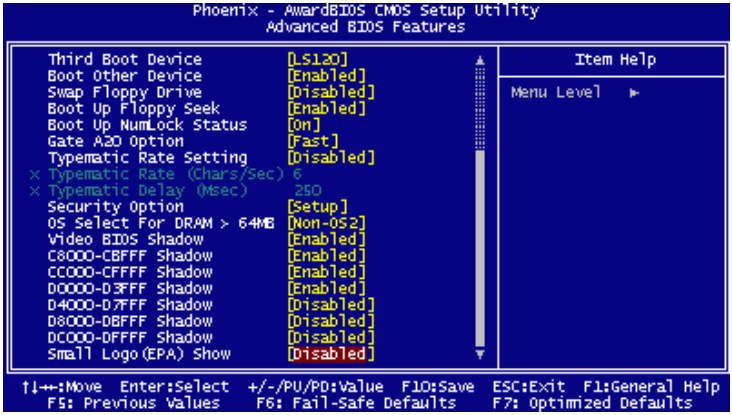


Figure 3.2: Advanced BIOS features screen

3.4.1 Virus Warning

Allows you to choose the VIRUS warning feature for IDE hard disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep. The commands are “Enabled” or “Disabled.”

3.4.2 CPU Internal Cache

The commands are “Enabled” or “Disabled.”

3.4.3 External Cache

The commands are “Enabled” or “Disabled.”

3.4.4 CPU L2 cache ECC checking

The commands are “Enabled” or “Disabled.”

3.4.5 Quick Power on Self Test

Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.

The commands are “Enabled” or “Disabled.”

3.4.6 First/Second/Third/Other Boot Device

Select your boot device priority. Choices are: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, AIP100, LAN and disabled.

3.4.7 Swap Floppy Drive

If the system has two floppy drives, choose enable to assign physical drive B to logical drive A and vice-versa. The commands are “enable” or “disable”.

3.4.8 Boot up Floppy Seek

Enabled tests floppy drives to determine whether they have 40 or 80 tracks. The commands are “enable” or “disable”.

3.4.9 Boot Up NumLock Status

This feature selects the “power on” state for NumLock. The commands are “Enabled” or “Disabled.”

3.4.10 Gate A20 Option

Normal: A pin in keyboard controller controls GateA20

Fast (Default): Chipest controls GateA20.

3.4.11 Typematic Rate Setting

The typematic rate is the rate key strokes repeat as determined by the keyboard controller. The commands are “Enabled” or “Disabled.” Enabling allows the typematic rate and delay to be selected.

3.4.12 Typematic Rate (Chars/Sec)

BIOS accepts the following input values (characters/second) for typematic rate: 6, 8, 10, 12, 15, 20, 24, 30.

3.4.13 Typematic Delay (msec)

Typematic delay is the time interval between the appearance of two consecutive characters, when holding down a key. The input values for this category are: 250, 500, 750, 1000 (msec).

3.4.14 Security Option

This setting determines whether the system will boot up if the

password is denied. Access to Setup is always limited.

System The system will not boot, and access to Setup will be denied if the correct password is not entered at the prompt.

Setup The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

3.4.15 OS Select For DRAM > 64MB

Select OS2 only if you are running OS/2 operating system with greater than 64MB of DRAM on the system. The commands are “Non-OS2” or “OS2”.

3.4.16 Video BIOS shadow

Enabled copies video BIOS to shadow RAM improves performance. The commands are “Disabled” or “Enabled”. Shadow choices includes “C8000-CBFFF Shadow”, “CC000-CFFFF Shadow”, “D0000-D3FFF Shadow”, “D4000-D7FFF Shadow”, “D8000-DBFFF Shadow”, “DC000-CFFFF Shadow”.

3.4.17 Small Logo (EPA) show

The commands are “Disable” or “Enabled”.

Note: To disable security, select “PASSWORD SETTING” in the main menu. At this point, you will be asked to enter a password. Simply press <Enter> to disable security. When security is disabled, the system will boot, and you can enter Setup freely.

3.5 Advanced Chipset Feature

```
Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

  DRAM Timing By SPD          [Enabled]          Item Help
x DRAM Clock                  Host CLK
x SDRAM Cycle Length          3                  Menu Level  ►
x Bank Interleave             Disabled
  Memory Hole                 [Disabled]
  P2C/C2P Concurrency         [Enabled]
  System BIOS Cacheable       [Disabled]
  Video RAM Cacheable         [Disabled]
  Frame Buffer Size           [4M]
  AGP Aperture Size           [128M]
  AGP-4X Mode                 [Disabled]
  AGP Driving Control         [Auto]
x AGP Driving Value           DA
  Select Display Device       [Auto]
  TV Type                     [JP NTSC]
  Panel Type                  [O7]
  OnChip USB                  [Enabled]
  USB Keyboard Support        [Disabled]
  OnChip Sound                [Auto]

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
  F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults
```

```
Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

  Frame Buffer Size           [4M]               Item Help
  AGP Aperture Size           [128M]
  AGP-4X Mode                 [Disabled]         Menu Level  ►
  AGP Driving Control         [Auto]
x AGP Driving Value           DA
  Select Display Device       [Auto]
  TV Type                     [JP NTSC]
  Panel Type                  [O7]
  OnChip USB                  [Enabled]
  USB Keyboard Support        [Disabled]
  OnChip Sound                [Auto]
  OnChip Modem                [Auto]
  CPU to PCI Write Buffer     [Disabled]
  PCI Dynamic Bursting        [Enabled]
  PCI Master 0 WS Write       [Enabled]
  PCI Delay Transaction       [Disabled]
  PCI#2 Access #1 Retry       [Enabled]
  AGP Master 1 WS Write       [Disabled]
  AGP Master 1 WS Read        [Disabled]

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
  F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults
```

Figure 3.3: Advanced Chipset Features screen

3.5.1 DRAM Timing by SPD

3.5.2 Memory Hole

3.5.3 P2C/C2P Concurrency

3.5.4 System BIOS Cacheable

3.5.5 Video RAM Cacheable

The commands for the above items are “enable” or “disable”.

3.5.6 Frame Buffer Size

The choices of frame buffer size include 2M, 4M, 8M, 16M and 32M.

3.5.7 AGP Aperture Size

The choices of AGP Aperture size includes 128M, 64M, 32M, 16M, 8M and 4M.

3.5.8 AGP-4X mode

The command for the above items is “enable” or “disable”.

3.5.9 AGP Driving Control

The command is “Auto” or “Manual”.

3.5.10 Select Display Device

The choices includes “Auto”, “CRT”, “LCD”, “CRT + LCD”, “TV”, “CRT + TV”, “DVI” and “CRT + DVI”.

3.5.11 TV type

The choices includes “JP NTSC”, “US NTSC” and “PAL”.

3.5.12 Panel type

Min = 0000

Max = 000F and, key in a HEX number in it.

3.5.13 OnChip USB

The command is “enable” or “disable”.

3.5.14 USB keyboard Support

The command is “enable” or “disable”.

3.5.15 OnChip Sound

The command is “Auto” or “Disable”.

3.5.16 OnChip modem

The command is “Auto” or “Disable”.

3.5.17 CPU PCI Writer Buffer

3.5.18 PCI dynamic Bursting

3.5.19 PCI Master 0 WS Write

3.5.20 PCI Delay Transaction

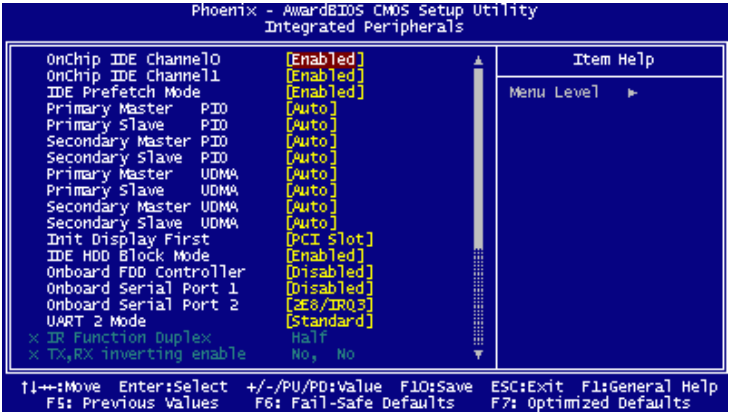
3.5.21 PCI#2 Access#1 Retry

3.5.22 AGP Master 1 WS Write

3.5.23 AGP Master 1 WS Read

The command for above items is “Enable” or “Disable”.

3.6 Integrated Peripherals



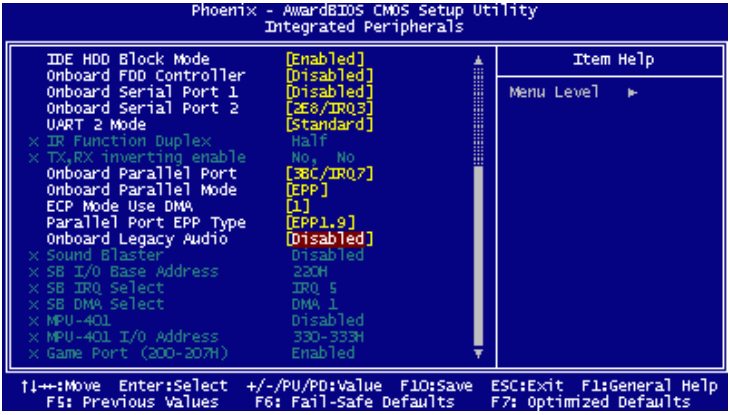


Figure 3.4: Integrated Peripherals screen

3.6.1 OnChip IDE Channel 10, Channel 11, IDE Prefetch Mode

The command is “enable” or “disable”.

3.6.2 IDE Master/Slave PIO/UDMA Mode

IDE Primary (Secondary) Master/Slave PIO/UDMA Mode (Auto) Each channel (Primary and Secondary) has both a master and a slave, making four IDE devices possible. Because each IDE device may have a different Mode timing (0, 1, 2, 3, 4), it is necessary for these to be independent. The default setting “Auto” will allow autodetection to ensure optimal performance.

3.6.3 Init Display First

This item allows you to choose which one to activate first, PCI Slot or onchip VGA. The choices: PCI Slot, Onboard.

3.6.4 IDE HDD Block Mode

If your IDE hard drive supports block mode select Enables for automatic detection of the optimal number of block read/writes per sector the drive can support.

3.6.5 Onboard FDD Controller

The command is “Enabled” or “Disable”.

3.6.6 Onboard Serial Port

For settings reference the Appendix for the serial resource allocation, and Disabled for the on-board serial connector. The choices are included “Disable”, “3F8/IRQ4”, “2F8/IRQ3”, “3E8/IRQ4”, “2E8/IRQ3” and “Auto”.

3.6.7 UART 2 Mode Select

This item allows you to select UART mode. The choices: Standard, HPSIR and ASKIR.

3.6.8 Onboard Parallel Port

This field sets the address of the on-board parallel port connector. You can select either 3BC/IRQ7, 378/IRQ7, 278/IRQ5 or Disable. If you install an I/O card with a parallel port, make sure there is no conflict in the address assignments. The CPU card can support up to three parallel ports, as long as there are no conflicts for each port.

3.6.9 Parallel Port Mode

This field allows you to set the operation mode of the parallel port. The setting “Normal” allows normal speed operation, but in one direction only. “EPP” allows bidirectional parallel port operation at maximum speed. “ECP” allows the parallel port to operate in bi-directional mode

and at a speed faster than the maximum data transfer rate. “ECP + EPP” allows normal speed operation in a two-way mode.

3.6.10 Onboard Legacy Audio

Select Disable if you do not want to use AC-97 audio. The option is Disabled or Enabled.

3.6.11 Sound Blaster

The command is “Disabled” or “Enabled”.

3.6.12 SB I/O Base Address

The choice is “220H”, “240H”, “260H” or “280H”.

3.6.13 SB IRQ Select

The choice is “IRQ5”, “IRQ7”, “IRQ9” or “IRQ10”.

3.6.14 SB DMA Select

The choice is “DMA0”, “DMA1”, “DMA2” or “DMA3”.

3.6.15 MPU-401

The command is “Disable” or “Enabled”.

3.6.16 MPU-401 I/O Address

The choice is “300-303H”, “310-313H”, “320-323H”, or “330-333H”.

3.6.17 Game Port (200-207H)

The command is “Disable” or “Enabled”.

3.7 Power Management Setup

The power management setup controls the CPU card's "green" features to save power. The following screen shows the manufacturer's defaults:

```
Phoenix - AwardBIOS CMOS Setup Utility
Power Management

Power Management          [User Define]        Item Help
HDD Power Down            [Disable]
Doze Mode                 [Disable]            Menu Level  ►►
Suspend Mode              [Disable]

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

```
Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

  ACPI function            [Enabled]            Item Help
► Power Management         [Press Enter]
  ACPI Suspend Type        [S1(POS)]            Menu Level  ►
  PM Control by APM        [No]
  Video Off Option         [Suspend -> Off]
  Video Off Method         [Blank Screen]
  MODEM Use IRQ            [3]
  Soft-Off by PWRBTN       [Instant-Off]
► Wake Up Events           [Press Enter]

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Figure 3.5: Power management setup screen

3.7.1 ACPI function

The choice: Enabled, Disabled.

3.7.2 Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Power Management
2. HDD Power Down
3. Doze Mode
4. Suspend Mode

3.7.2.1 Power Management

There are four selections for Power Management, three of which have fixed mode settings

Min. Power Saving	Minimum power management., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (Default)	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

3.7.2.2 HDD Power Down

You can choose to turn the HDD off after one of the time intervals listed, or when the system is in “suspend” mode. If the HDD is in a power saving mode, any access to it will wake it up.

3.7.2.3 Doze mode

The choices are “Disable”, “1 Min”, “2 Min”, “4 Min”, “6 Min”, “8 Min”, “10 Min”, “20 Min”, “30 Min”, and “40 Min”.

3.7.2.4 Suspend mode

The choices are “Disable”, “1 Min”, “2 Min”, “4 Min”, “6 Min”, “8 Min”, “10 Min”, “20 Min”, “30 Min”, “40 Min” and “1 Hour”.

3.7.3 ACPI Suspend Type

The ACPI suspend type are S1(POS) and S3 (STR).

3.7.4 PM Control by APM

The option is “No’ or “Yes”.

3.7.5 Video Off Option

You can choose “Always On”, “Suspend-->off” or “All modes-->off” for your system.

3.7.6 Video Off Method

The option is “Blank Screen”, “V/H SYNC + Blank” or “DPMS Support”.

3.7.7 Modem Use IRQ

This determines the IRQ in which the MODEM can use.The choices: 3, 4, 5, 7, 9, 10, 11, NA.

3.7.8 Soft-Off by PWR-BTTN

If you choose “Instant-Off”, then pushing the ATX soft power switch button once will switch the system to “system off” power mode. You can choose “Delay 4 sec.” If you do, then pushing the button for more than 4 seconds will turn off the system, whereas pushing the button momentarily (for less than 4 seconds) will switch the system to “suspend” mode.

3.7.9 Wake up Event

3.7.9.1 VGA-OFF, ON

3.7.9.2 LPT & COM-NONE, LPT, COM, LPT/COM

When Enabled, the system will resume from suspend mode if FDD, COM port, or LPT port is active. The choice: Enabled, Disabled.

3.7.9.3 HDD & FDD-OFF, ON

When Enabled, the system will resume from suspend mode if Primary IDE 0 (1) or Secondary IDE 0 (1) is active. The choice: Enabled, Disabled.

3.7.9.4 PCI Master-OFF, ON

3.7.9.5 Modem Ring Resume-Disabled, Enabled

3.7.9.6 RTC Alarm Resume

Set to “ON” to wake the system up from suspend mode as defined in Resume Time. Date (of Month): Resume Time (hh: mm: ss).

When Enabled, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode. The choices: Enabled, Disabled.

3.7.9.7 Primary INTR-OFF, ON

3.7.9.8 IRQs Activity Monitoring

```
Phoenix - AwardBIOS CMOS Setup Utility
IRQs Activity Monitoring

x IRQ3  (COM 2)            Disabled        Item Help
x IRQ4  (COM 1)            Disabled
x IRQ5  (LPT 2)            Disabled        Menu Level  ►►►
x IRQ6  (Floppy Disk)      Enabled
x IRQ7  (LPT 1)            Disabled
x IRQ8  (RTC Alarm)        Disabled
x IRQ9  (IRQ2 Redir)       Disabled
x IRQ10 (Reserved)         Disabled
x IRQ11 (Reserved)         Disabled
x IRQ12 (PS/2 Mouse)       Enabled
x IRQ13 (Coprocessor)      Enabled
x IRQ14 (Hard Disk)        Enabled
x IRQ15 (Reserved)         Disabled

↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults
```

Figure 3.6: IRQs Activity Monitoring screen

IRQ3 (COM 2) - Enabled, Disabled

IRQ4 (COM 1) - Enabled, Disabled

IRQ5 (LPT 2) - Enabled, Disabled

IRQ6 (Floppy Disk) - Enabled, Disabled

IRQ7 (LPT 1) - Enabled, Disabled

IRQ8 (RTC Alarm) - Enabled, Disabled

IRQ9 (IRQ2 Redir) - Enabled, Disabled

IRQ10 (Reserved) - Enabled, Disabled

IRQ11 (Reserved) - Enabled, Disabled

IRQ12 (PS/2 Mouse) - Enabled, Disabled

IRQ13 (Coprocessor) - Enabled, Disabled

IRQ14 (Hard Disk) - Enabled, Disabled

IRQ15 (Reserved) - Enabled, Disabled

3.8 PnP/PCI Configurations

3.8.1 PnP OS Installed

Select Yes if you are using a plug and play capable operating system. Select No if you need the BIOS to configure non-boot device

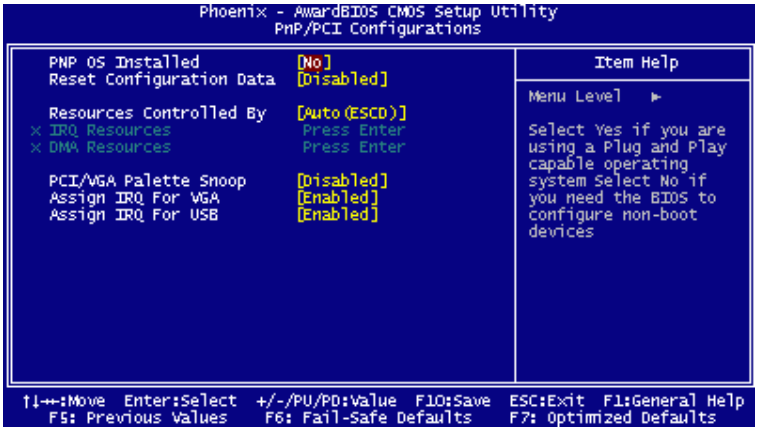


Figure 3.7: PnP/PCI configurations screen

3.8.2 Reset Configuration Data

Default is Disable. Select Enable to reset Extended System Configuration Data (ESCD) if you have installed a new add-on and system econfiguration has caused such a conflict that OS cannot boot.

3.8.3 Resources controlled by:

The commands here are “Auto” or “Manual.” Choosing “manual” requires you to choose resources from each following sub-menu. “Auto” automatically configures all of the boot and Plug and Play devices but you must be using Windows 95 or above.

3.8.4 PCI/VGA Palette Snoop

This is left at “Disabled.”

3.8.5 Assign IRQ for VGA

3.8.6 Assign IRQ for USB

3.9 PC Health Status

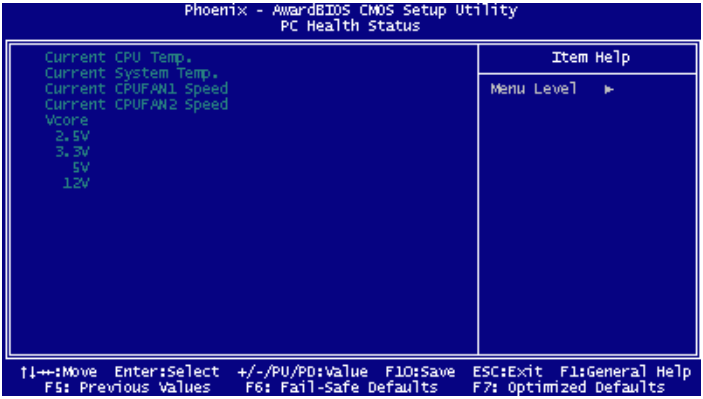


Figure 3.8: PC Health Status screen

You can see your system status from this section. Includes:

Current CPU Temp.

Current System Temp.

Current CPUFAN1 Speed

Current CPUFAN2 Speed

VCore

2.5V

3.3V

5V

12V

3.10 Load fail-safe Defaults

Yes/No

3.11 Load Optimized Defaults

Yes/No

3.12 Password Setting

To set Supervisor Password and Set User Password:

1. Choose the “Set Password” option from the “Initial Setup Screen” menu and press <Enter>.

   The screen will display the following message:

Please Enter Your Password

   Press <Enter>.

2. If the CMOS is good or if this option has been used to change the default password, the user is asked for the password stored in the CMOS. The screen will display the following message:

Please Confirm Your Password

   Enter the current password and press <Enter>.

3. After pressing <Enter> (ROM password) or the current password (user-defined), you can change the password stored in the CMOS. The password must be no longer than eight (8) characters.

Remember, to enable the password setting feature, you must first select either “Setup” or “System” from the “Advanced BIOS Features” menu.

3.13 Save & Exit Setup

If you select this and press <Enter>, the values entered in the setup utilities will be recorded in the CMOS memory of the chipset. The microprocessor will check this every time you turn your system on and compare this to what it finds as it checks the system. This record is required for the system to operate.

3.14 Exit Without Saving

Selecting this option and pressing <Enter> lets you exit the setup program without recording any new values or changing old ones.

CHAPTER 4

PCI SVGA/LCD Setup

This chapter details the software configuration information. It shows you how to configure the card to match your application requirements. The AWARD System BIOS is covered in Chapter 4.

Sections include:

- Installation of SVGA drivers
  - -for Window XP
- Connections for standard LCDs
- Further information

Chapter 4 PCI SVGA/LCD Setup

4.1 Introduction

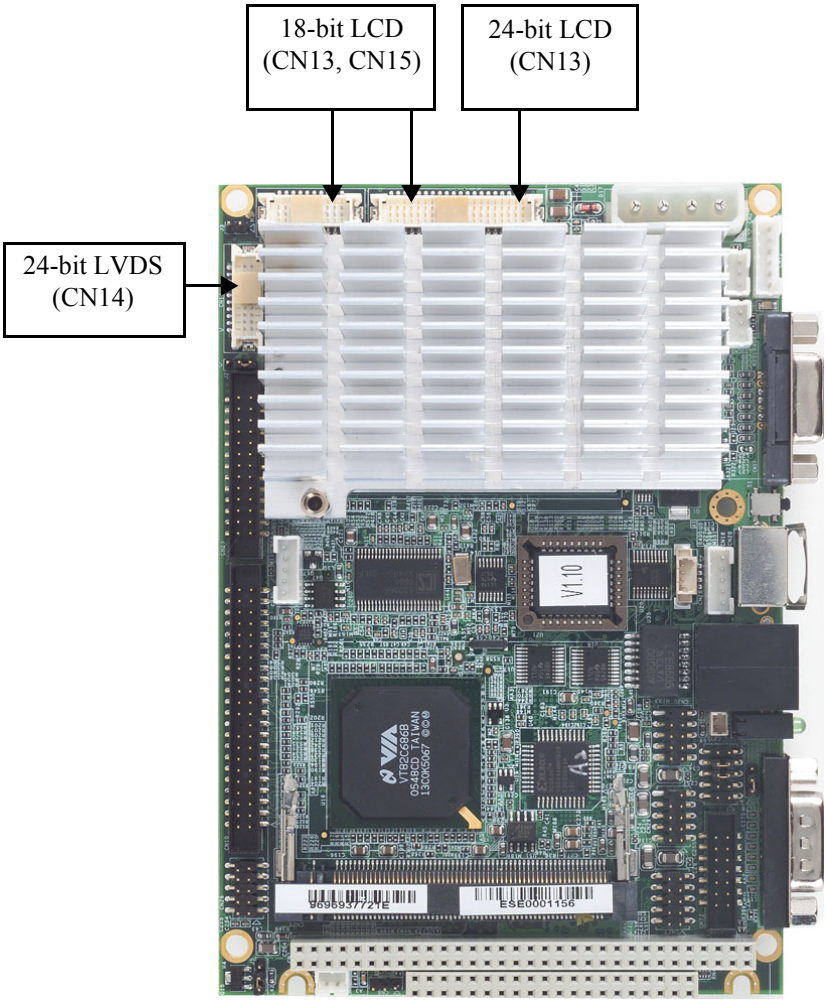
The board has an onboard VIA Mark 533/88 process for its AGP/SVGA controller. It can supports a wide variety CRT panel, TTTL TFT panels, LVDS panels, and TV-out with dual simultaneous display. Through a 36-bit CMOS interface, it includes support for VGA, SVGA, XGA, and SXGA as well as TFT LCD panels with 9-bit, 12-bit, 18-bit, 24-bit and 36-bit. By linking TTL connector, the board can support TV-out with PCM-232 module. Besides TTL TFT LCD and TV-out, the integrated 2-channel LVDS interfaced can support 18-bit color panels. All resolutions are supported up to SXGA + (1400 x 1050).

4.1.1 Display type and Dual Simultaneous Display

The board supports four type of panel, CRT, TTL TFT LCD, LVDS panel, and TV-out. It can be set in one of four configurations -- "Auto", "CRT", "LCD", "LVDS", "TV", or one dual simultaneous display -- "CRT+LCD","CRT+TV", and "CRT+LVDS". This system is initially set to dual display mode. If you want to enable other display model, please set them up from the BIOS screen, or contact Advantech technical support center.

4.1.2 CMOS setting for panel type

The board system BIOS and custom drivers are located in a 512 Kbyte, Flash ROM device. A single Flash chip holds the system BIOS, VGA BIOS and network Boot ROM image. The display can be configured via CMOS settings. This method minimized the number of chips and different type of LCD panels, please choose "panel type" from the "Advanced Chipset Features" menu in CMOS setting.



4.2 Connections to Two Standard LCDs

Connector Table of 12.1" TTL Sharp LQ121S1DG31 800 x 600 5/3.3V (18 Bit) for PCM-9377 AMD Geode LX.

4.2.1 TX26D01VM1CAA and PCM-9377

Table 4.1: Connections to TX26D01VM1CAA / PCM-9377

TX26D01VM1CAA		**PCM-9377**	
FH12-32S-0.5SH		**DF13A-40DP-1.25V**	
Pin	**Function**	**Pin**	**Function**
1	VSS	3	GND
2	DCLK	35	SHFCLC
3	NC		
4	NC		
5	CSS	4	GND
6	R0	27	P18
7	R1	28	P19
8	R2	29	P20
9	R3	30	P21
10	R4	31	P22
11	R5	32	P23
12	VSS	34	GND
13	G0	19	P10
14	G1	20	P11
15	G2	21	P12
16	G3	22	P13
17	G4	23	P14
18	G5	24	P15
19	VSS	33	GND
20	B0	11	P2
21	B1	12	P3
22	B2	13	P4
23	B3	14	P5
24	B4	15	P6
25	B5	16	P7
26	VSS	8	GND
27	DTMG	37	M/DE
28	VDD (3.3)	5	3.3V
29	VDD (3.3)	6	3.3V
30	TEST		

Table 4.1: Connections to TX26D01VM1CAA / PCM-9377			
31	NC		
32	VSS	4	GND

4.3 Installation of the SVGA Driver

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your board.

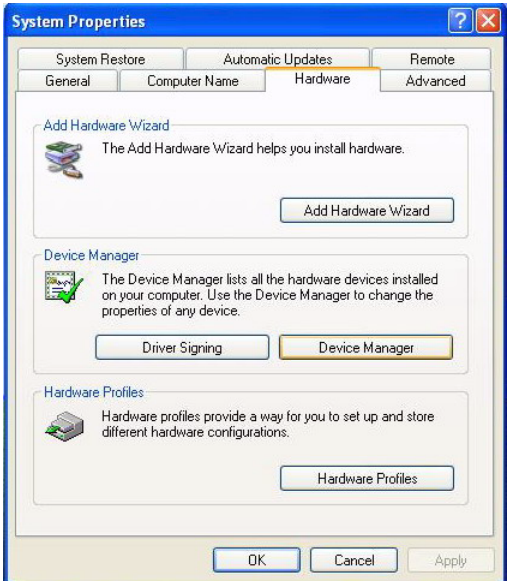
Notes: *1. The windows illustrations in this chapter are intended as examples only. Please follow the listed steps, and pay attention to the instructions which appear on your screen.*

2. For convenience, the CD-ROM drive is designated as "D" throughout this chapter.

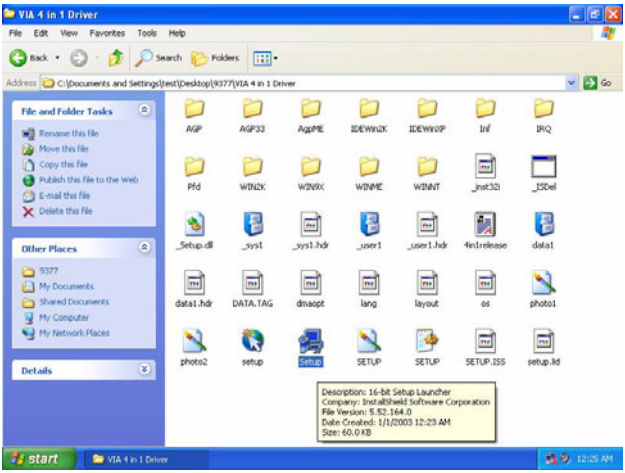
4.3.1 Installation chipset

1. Open “my computer”, right click on properties

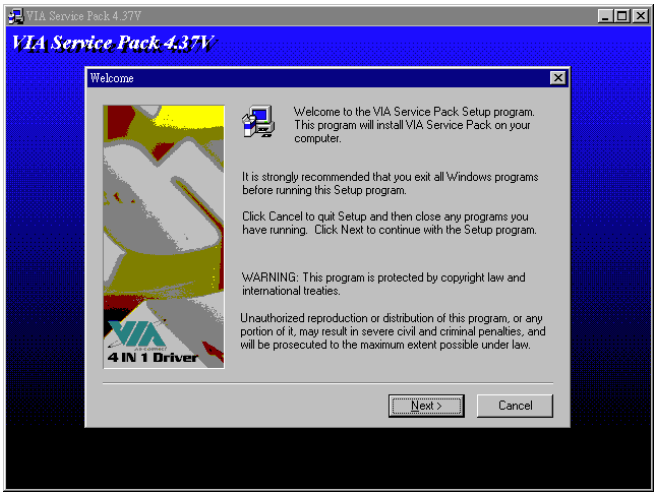
2. Right click “Hardware/Device Manager” and add new device.



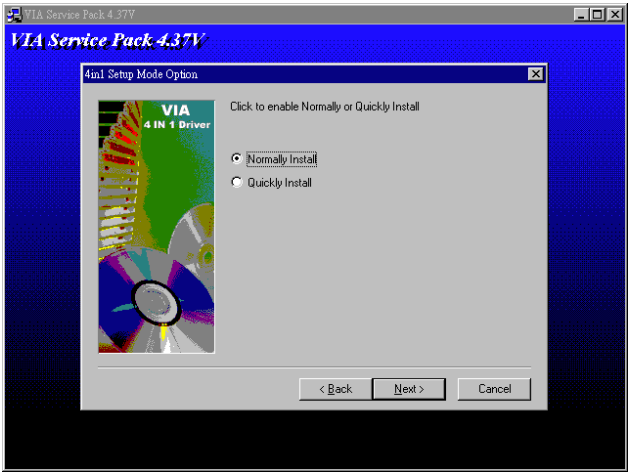
3. Find the chipset driver on driver CD and double click it to start installation process.



4.Click on welcome, then click next.



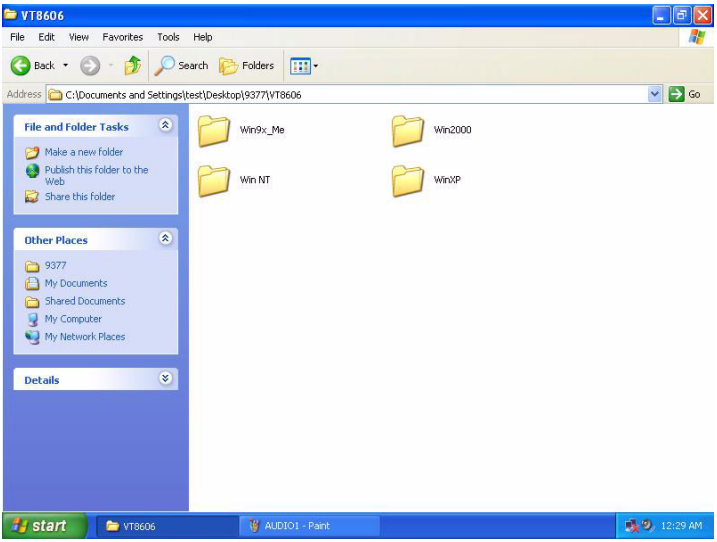
5.Click on next.



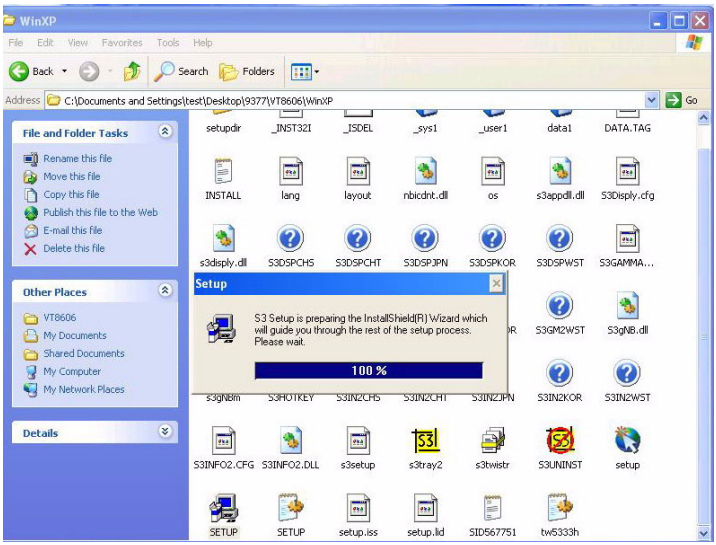
6.Click on finish.

4.3.2 Installation of VGA driver

1. Install driver CD, find VGA folder and enter it.



2. Double click setup and start to run installation process.

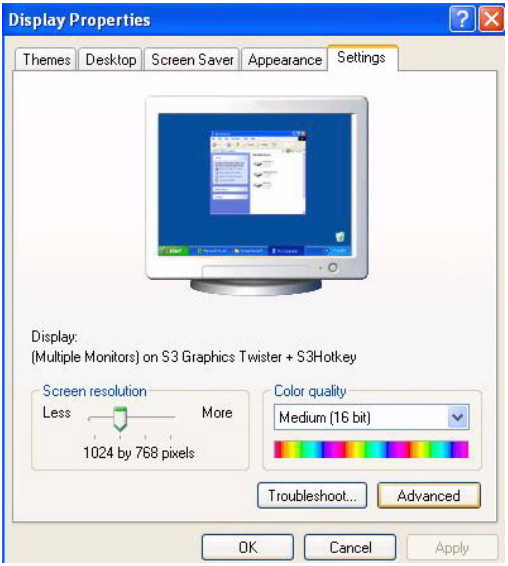


3. Select “YES” to restart your computer after installation is finished.

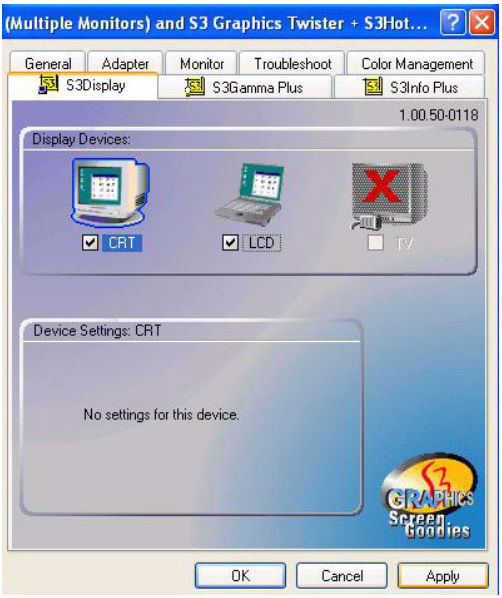
4.3.3 Dual Simultaneous Display

To set up dual display under 2000/XP follow these steps:

1. Select “Control panel”, “Display” “Setting”



2. Click “Advanced”, “S3 display setting”.



4.4 Further Information

For further information about the AGP/VGA installation in your PCM-9377, including driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

Intel website: *www.intel.com*

Advantech websites: *www.advantech.com*

www.advantech.com.tw

CHAPTER 5

Audio Setup

The board is equipped with an audio interface that records and plays back CD-quality audio. This chapter provides instructions for installing the software drivers included on the audio driver diskettes.

Chapter 5 Audio Setup

5.1 Introduction

The board's on-board audio interface provides high-quality stereo sound by using the chipset audio controller and ALC650 audio codec. The audio interface can record, compress, and play back voice, sound, and music with built-in mixer control.

5.2 Driver installation

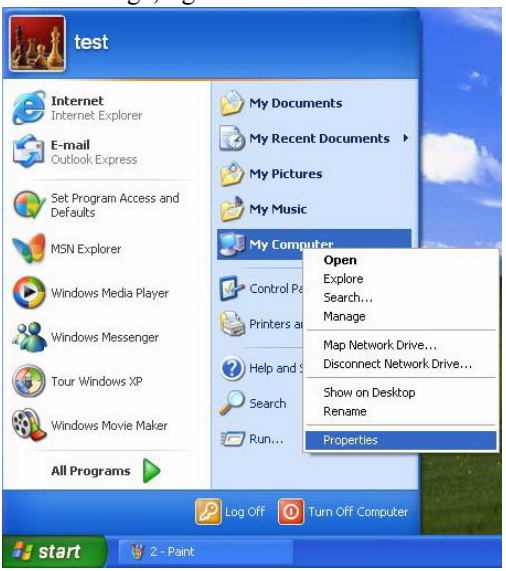
5.2.1 Before you begin

Please read the instructions in this chapter carefully before you attempt installation. The audio drivers for the board are located on the audio driver CD. Run the supplied SETUP program to install the drivers; don't copy the files manually.

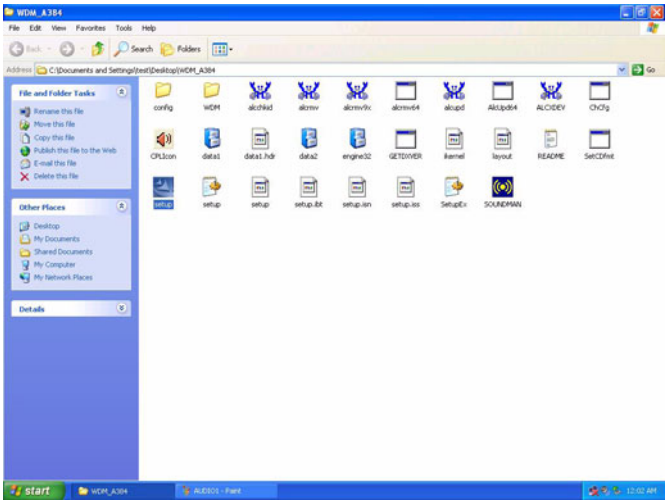
Note: *The files on the software installation diskette are compressed. Do not attempt to install the drivers by copying the files manually. You must use the supplied SETUP program to install the drivers.*

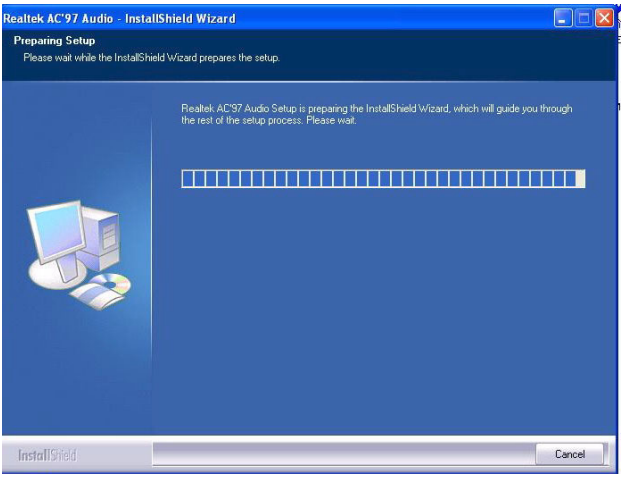
5.2.2 Windows XP drivers

1. Open device manage, right click on audio and click on property.

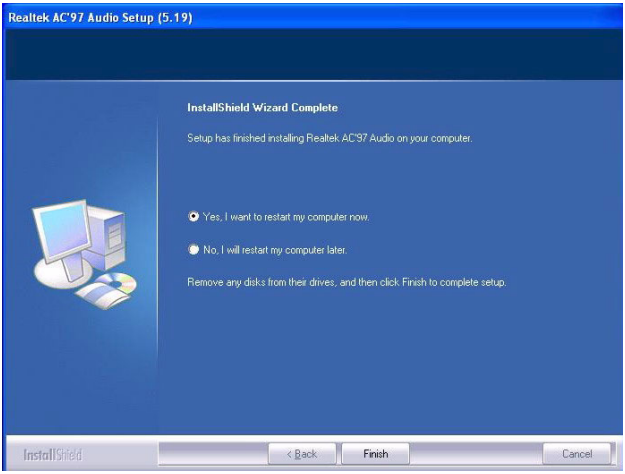


2. Find the Audio folder in the driver CD and start to run the “setup” program.





3. Please click “YES” to restart the computer after installation is finished.



CHAPTER 6

Ethernet Interface

This chapter provides information on Ethernet configuration.

Sections include:

- Introduction
- Installation of Ethernet drivers for Windows XP
- Further information

Chapter 6 Ethernet Interface

6.1 Introduction

The board is equipped with a high performance 32-bit Ethernet chipset which is fully compliant with IEEE 802.3 100 Mbps CSMA/CD standards. It is supported by major network operating systems. With 100Base-T compatible. The network boot feature can be utilized by incorporating the boot ROM image files for the appropriate network operating system. The boot ROM BIOS files are combined with system BIOS, which can be enabled/disabled in the BIOS setup.

6.2 Installation of Ethernet driver

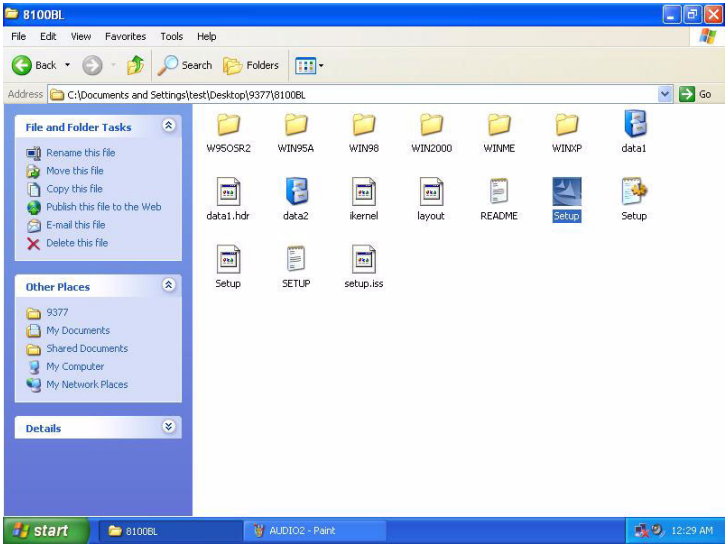
The board uses Realtek chipset as default Ethernet chipset. Also, Intel 82551ER will be an optional chipset. Before installing the Ethernet driver, note the procedures below. You must know which operating system you are using in your board, and then refer to the corresponding installation flow chart. Then just follow the steps described in the flow chart. You will quickly and successfully complete the installation, even if you are not familiar with instructions for MS-DOS or Windows.

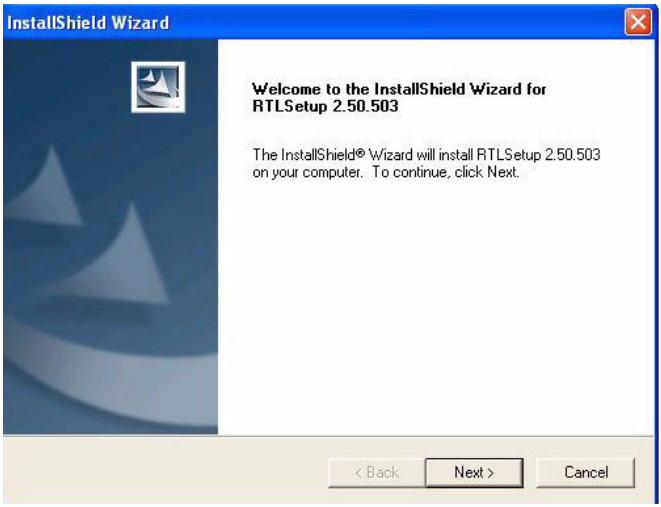
Note: *The windows illustrations in this chapter are examples only. Follow the steps and pay attention to the instructions which appear on your screen.*

6.2.1 Install Realtek RTL8100 chipset

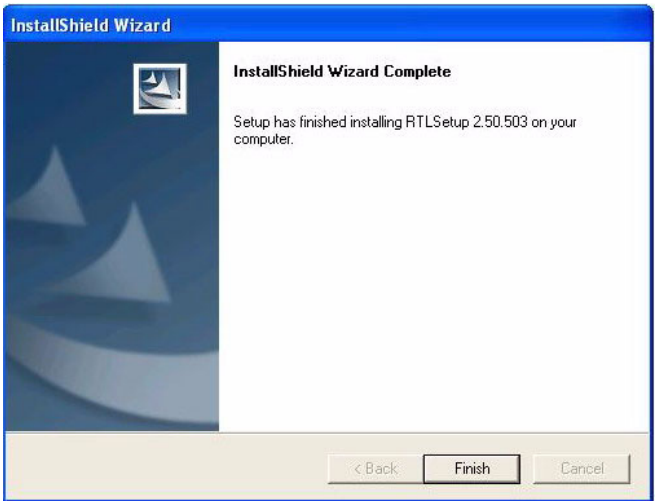
It is auto-detec RTL8100 LAN chipset under Win XP OS without any driver installation. Hereby, we would like to introduce the installation step when user run Win 2000 OS at their computing system.

1. Find " RTL8100" folder at driver CD, click "setup" for installation





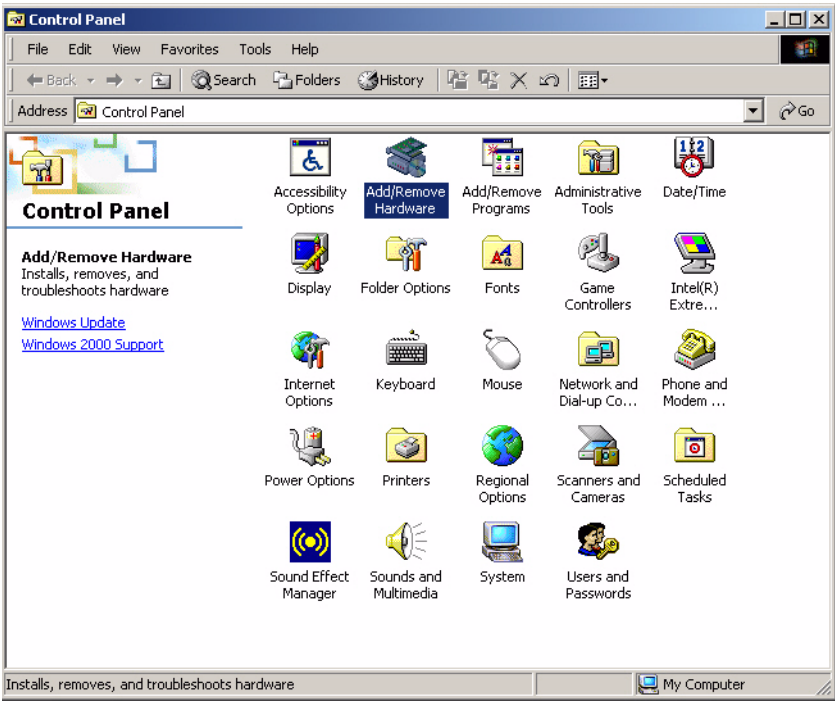
2. Click “Finish” when the installation program is completed and restart the computing system.



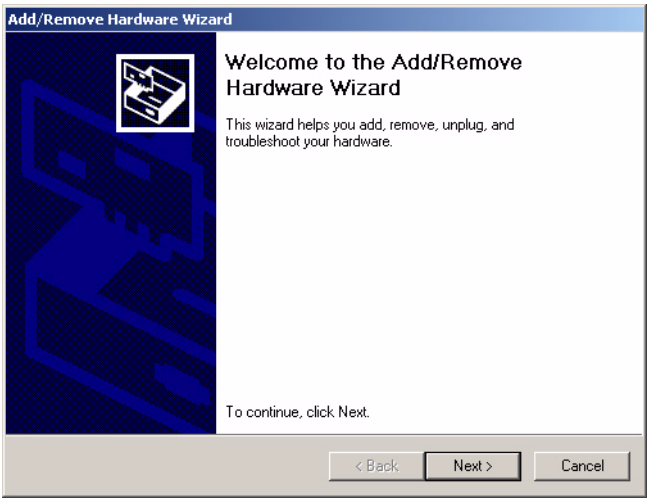
6.2.2 Installation for Windows XP

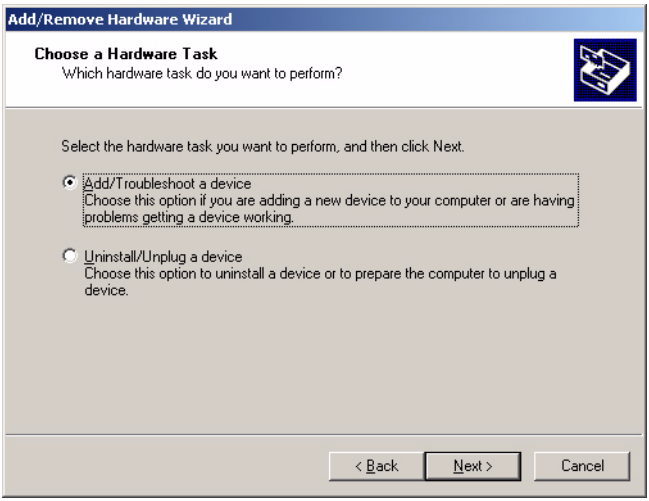
1. a. Select "Start", "Settings". "Control Panel".

   b. Double click "Network".

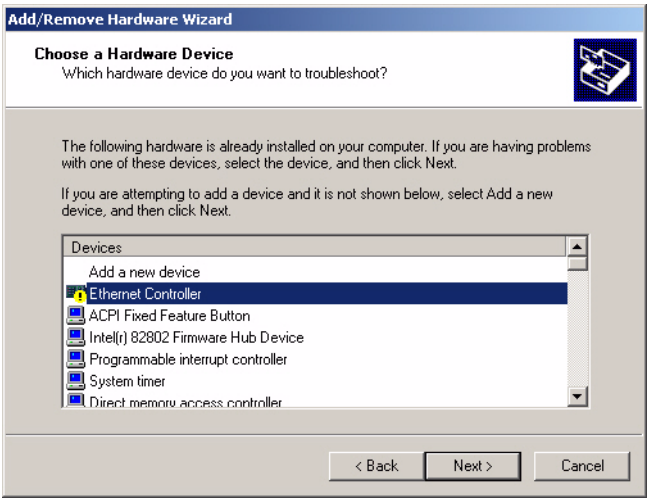


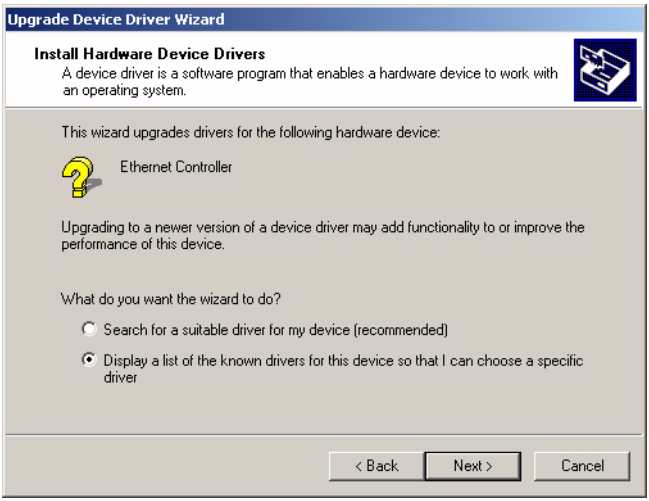
2. Click “Add new hardware wizard” and prepare to install network function

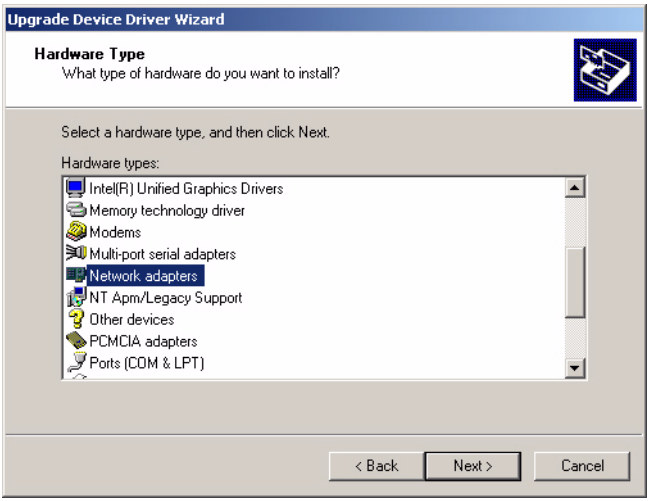




3. Choose Hardware Device “Ethernet Controller”



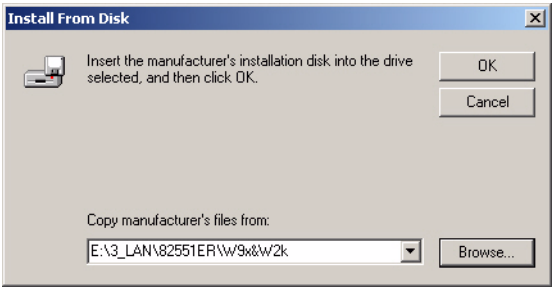




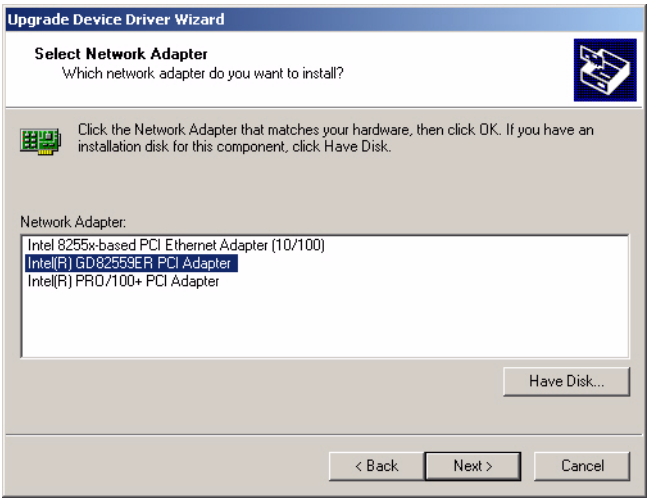
4. Insert the CD into D: drive

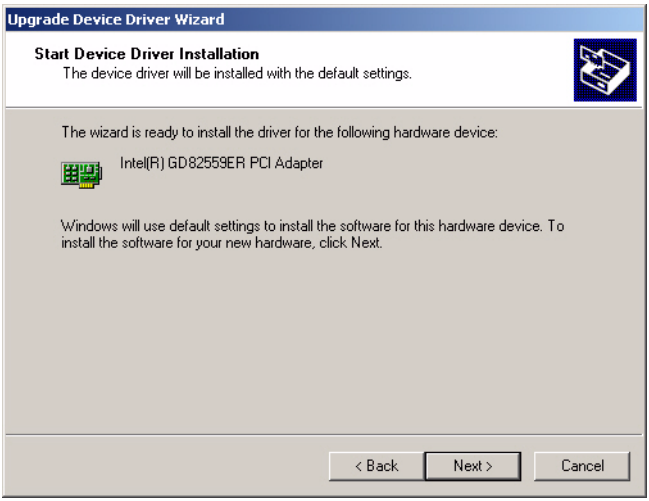
a. Fill in the Find the LAN chipset folder at the driver CD.

b. Click “OK”.



5. Choose the "Intel(R) GD82559ER PCI Adapter" item
Click “Next”





6 a. Make sure the configurations of relative items are set correctly

b. Click “OK”

6.3 Further information

Intel website: **www.intel.com**
Advantech websites:**www.advantech.com**
www.advantech.com.tw

Appendix A

Pin Assignments

This appendix contains information of a detailed or specialized nature. It includes:

- Stand-by Power Input
- Power Input
- SODIMM (H:5.6mm)
- Power Switch
- CPU_FAN
- External Battery
- ISA -5V & -12V Input
- CF (Compact Flash)
- IDE
- Slim FDD (Floppy Disk Drive)
- HDD & Power LED
- LCD / LVDS connector
- Inverter
- VGA
- IrDA (SIP)
- USB1/2 ; USB3/4
- Keyboard / Mouse
- COM1/COM2
- Print Port
- LAN1
- MiniPCI
- Audio
- GPIO
- SMBus

Appendix A Pin Assignments

A.1 Stand-by Power Input (CN1)

Table A.1: Stand-by Power Input (CN1)		
Part Number	**1655303020**	
Description	**Wafer Box 2.0mm 3P180D w/Lock**	
Pin	**Pin Name**	**Signal Type**
1	+5 V	PWR
2	GND	GND
3	PS	IN

A.2 Power Input (CN2)

Table A.2: Power Input (CN2)		
Part Number	**1655204030**	
Description	**Housing 5.08mm 4P 180D Male w/o Lock**	
Pin	**Pin Name**	**Signal Type**
1	+12 V	PWR
2	GND	GND
3	GND	GND
4	+5 V	PWR

A.3 SODIMM (CN3)

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
1	GND	GND
2	GND	GND
3	MD0	I/O
4	MD32	I/O
5	MD1	I/O
6	MD33	I/O
7	MD2	I/O
8	MD34	I/O
9	MD3	I/O
10	MD35	I/O
11	+3.3 V	PWR
12	+3.3 V	PWR
13	MD4	I/O
14	MD36	I/O
15	MD5	I/O
16	MD37	I/O
17	MD6	I/O
18	MD38	I/O
19	MD7	I/O
20	MD39	I/O
21	GND	GND
22	GND	GND
23	DQM0	OUT
24	DQM4	OUT
25	DQM1	OUT
26	DQM5	OUT
27	+3.3V	PWR

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
28	+3.3V	PWR
29	MA0	OUT
30	MA3	OUT
31	MA1	OUT
32	MA4	OUT
33	MA2	OUT
34	MA5	OUT
35	GND	GND
36	GND	GND
37	MD8	I/O
38	MD40	I/O
39	MD9	I/O
40	MD41	I/O
41	MD10	I/O
42	MD42	I/O
43	MD11	I/O
44	MD43	I/O
45	+3.3V	PWR
46	+3.3V	PWR
47	MD12	I/O
48	MD44	I/O
49	MD13	I/O
50	MD45	I/O
51	MD14	I/O
52	MD46	I/O
53	MD15	I/O
54	MD47	I/O
55	GND	GND

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
56	GND	GND
57	NC	NC
58	NC	NC
59	NC	NC
60	NC	NC
61	M_CLK0	CLK
62	M_CKE0	OUT
63	+3.3V	PWR
64	+3.3V	PWR
65	M_RAS	OUT
66	M_CAS	OUT
67	M_WE	OUT
68	M_CKE1	OUT
69	M_CS0	OUT
70	MA14	OUT
71	M_CS1	OUT
72	NC	NC
73	M_OE	OUT
74	M_CLK1	CLK
75	GND	GND
76	GND	GND
77	NC	NC
78	NC	NC
79	NC	NC
80	NC	NC
81	+3.3V	PWR
82	+3.3V	PWR
83	MD16	I/O

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
84	MD48	I/O
85	MD17	I/O
86	MD49	I/O
87	MD18	I/O
88	MD50	I/O
89	MD19	I/O
90	MD51	I/O
91	GND	GND
92	GND	GND
93	MD20	I/O
94	MD52	I/O
95	MD21	I/O
96	MD53	I/O
97	MD22	I/O
98	MD54	I/O
99	MD23	I/O
100	MD55	I/O
101	+3.3V	PWR
102	+3.3V	PWR
103	MA6	OUT
104	MA7	OUT
105	MA8	OUT
106	MA11	OUT
107	GND	GND
108	GND	GND
109	MA9	OUT
110	MA12	OUT
111	MA10	OUT

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
112	MA13	OUT
113	+3.3V	PWR
114	+3.3V	PWR
115	DQM2	OUT
116	DQM6	OUT
117	DQM3	OUT
118	DQM7	OUT
119	GND	GND
120	GND	GND
121	MD24	I/O
122	MD56	I/O
123	MD25	I/O
124	MD57	I/O
125	MD26	I/O
126	MD58	I/O
127	MD27	I/O
128	MD59	I/O
129	+3.3V	PWR
130	+3.3V	PWR
131	MD28	I/O
132	MD60	I/O
133	MD29	I/O
134	MD61	I/O
135	MD30	I/O
136	MD62	I/O
137	MD31	I/O
138	MD63	I/O
139	GND	GND

Table A.3: SODIMM (CN3)		
Part Number	**1651500002**	
Description	***S.O.DIMM SKT 0.8mm 144P (N=30, M=42) H=5.6180D**	
Pin	**Pin Name**	**Signal Type**
140	GND	GND
141	SMB_DAT	I/O
142	SMB_CLK	I/O
143	+3.3V	PWR
144	+3.3V	PWR

A.4 Power Switch (CN4)

Table A.4: Power Switch (CN4)		
Part Number	**1655302020**	
Description	**Wafer box 2P 180D 2.0mm MALE W/Lock**	
Pin	**Pin Name**	**Signal Type**
1	PWRBTN	IN
2	GND	GND

A.5 CPU FAN (CN5)

Table A.5: CPU FAN (CN5)		
Part Number	**1655303020**	
Description	**Wafer box 2.0mm 3P 180D w/Lock**	
Pin	**Pin Name**	**Signal Type**
1	FAN-10	IN
2	+5 V	PWR
3	GND	GND

A.6 External Battery (CN6)

Table A.6: External Battery (CN6)		
Part Number	**1655902032**	
Description	**Wafer Box 2P 180D(M)**	
Pin	**Pin Name**	**Signal Type**
1	VBAT	PWR
2	GND	GND

A.7 ISA -5V & -12V Input (CN8)

Table A.7: ISA -5V & -12V Input (CN8)		
Part Number	**1653003101**	
Description	**Pin header 3*1P 180D (M) SQUARE 2.0mm**	
Pin	**Pin Name**	**Signal Type**
1	-12V	PWR
2	-5V	PWR
3	GND	GND

A.8 CF (Compact Flash) (CN9)

Table A.8: CF (Compact Flash) (CN9)

Part Number **1653025215**

Description **Header for CF Type II 50P 90D(M) Standoff 2.0mm**

Pin	Pin Name	Signal Type
1	GND	GND
2	D3	I/O
3	D4	I/O
4	D5	I/O
5	D6	I/O
6	D7	I/O
7	CS#1	OUT
8	A10	OUT
9	OE#	OUT
10	A9	OUT
11	A8	OUT
12	A7	OUT
13	+5V	PWR
14	A6	IN
15	A5	IN
16	A4	IN
17	A3	IN
18	A2	IN
19	A1	IN
20	A0	IN
21	D0	I/O
22	D1	I/O
23	D2	I/O
24	IOCS16#	IN
25	CF-CD#2	IN
26	CF-CD#1	IN

Table A.8: CF (Compact Flash) (CN9)		
Part Number	**1653025215**	
Description	**Header for CF Type II 50P 90D(M) Standoff 2.0mm**	
Pin	**Pin Name**	**Signal Type**
27	D11	I/O
28	D12	I/O
29	D13	I/O
30	D14	I/O
31	D15	I/O
32	CS#3	OUT
33	NC	
34	IOR#	OUT
35	IOW#	OUT
36	WE#	OUT
37	IRQ15	IN
38	+5V	PWR
39	CF-CSEL#	OUT
40	NC	
41	RST#	OUT
42	IORDY	OUT
43	DREQ	OUT
44	DACK#	OUT
45	CF	I/O
46	CF-S66DET#	IN
47	D8	I/O
48	D9	I/O
49	D10	I/O
50	GND	GND

A.9 IDE (CN10)

Table A.9: IDE (CN10)		
Part Number	**1653222262**	
Description	**Box header SMD 22*2P 180D(M) 2.0mm IDIOT-PROOF**	
Pin	**Pin Name**	**Signal Type**
1	RST#	OUT
2	GND	GND
3	D7	I/O
4	D8	I/O
5	D6	I/O
6	D9	I/O
7	D5	I/O
8	D10	I/O
9	D4	I/O
10	D11	I/O
11	D3	I/O
12	D12	I/O
13	D2	I/O
14	D13	I/O
15	D1	I/O
16	D14	I/O
17	D0	I/O
18	D15	I/O
19	GND	GND
21	DREQ	OUT
22	GND	GND
23	IOW#	OUT
24	GND	GND
25	IOR#	OUT
26	GND	GND
27	IORDY	OUT

Table A.9: IDE (CN10)		
Part Number	**1653222262**	
Description	**Box header SMD 22*2P 180D(M) 2.0mm IDIOT-PROOF**	
Pin	**Pin Name**	**Signal Type**
28	CSEL#	OUT
29	DACK#	OUT
30	GND	GND
31	IRQ14	IN
32	NC	
33	A1	IN
34	D66DET#	IN
35	A0	IN
36	A2	IN
37	CS#1	OUT
38	CS#3	OUT
39	ASP#	OUT
40	GND	GND
41	+5V	PWR
42	+5V	PWR
43	GND	GND
44	NC	

A.10 Slim FDD (Floppy Disk Array) (CN11)

Table A.10: Slim FDD (Floppy Disk Array) (CN11)

Part Number	**1651626991**
Description	**FPC ZIF SKT 26P W/LOCK SMD PFPC-3C26FS**

Pin	Pin Name	Signal Type
1	+5V	PWR
2	INDEX#	IN
3	+5V	PWR
4	DSA#	OUT
5	+5V	PWR
6	DSKCHG#	IN
7	NC	
8	NC	
9	NC	
10	MOA#	OUT
11	NC	
12	DIR#	OUT
13	NC	
14	STEP#	OUT
15	GND	GND
16	WD#	OUT
17	GND	GND
18	WE#	OUT
19	GND	GND
20	TRAK0#	IN
21	GND	GND
22	WP#	IN
23	GND	GND
24	RDATA#	IN
25	GND	GND
26	HEAD#	OUT

A.11 HDD & Power LED (CN12)

Table A.11: HDD & Power LED (CN12)

Part Number	**1655306020**
Description	**Wafer box 2.0mm 6P 180D MALE w/Lock**

Pin	Pin Name	Signal Type
1	+5V	PWR
2	GND	GND
3	+5V	PWR
4	GND	GND
5	+5V	PWR
6	HDLED	OUT

A.12 LCD Connector1 (CN13)

Table A.12: LCD Connector1 (CN13)

Part Number	**1653920200**
Description	***CONN.DF13-40DP-1.25V**

Pin	Pin Name	Signal Type
1	+5V	PWR
2	+5V	PWR
3	GND	GND
4	GND	GND
5	+3.3V	PWR
6	+3.3V	PWR
7	TV-CLK	CLK48M
8	GND	GND
9	D0	I/O
10	D1	I/O
11	D2	I/O
12	D3	I/O
13	D4	I/O
14	D5	I/O
15	D6	I/O
16	D7	I/O
17	D8	I/O
18	D9	I/O
19	D10	I/O
20	D11	I/O
21	D12	I/O
22	D13	I/O
23	D14	I/O
24	D15	I/O
25	D16	I/O
26	D17	I/O

Table A.12: LCD Connector1 (CN13)		
Part Number	**1653920200**	
Description	***CONN.DF13-40DP-1.25V**	
Pin	**Pin Name**	**Signal Type**
27	D18	I/O
28	D19	I/O
29	D20	I/O
30	D21	I/O
31	D22	I/O
32	D23	I/O
33	GND	GND
34	GND	GND
35	DOTCLK	CLK
36	VS	OUT
37	DE	I/O
38	HS	OUT
39	RST	OUT
40	FP-ENVEE	OUT

A.13 LVDS Connector (CN14)

Table A.13: LVDS Connector (CN14)

Part Number	**1653910261**
Description	***CONN. SMD 10*2P 180D(M) DF13-20DP-1.25V HRS**

Pin	Pin Name	Signal Type
1	GND	GND
2	GND	GND
3	LVDS0- D0+	I/O
4	LVDS1-D0+	I/O
5	LVDS0-D0-	I/O
6	LVDS1-D0-	I/O
7	LVDS0-D1+	I/O
8	LVDS1-D1+	I/O
9	LVDS0-D1-	I/O
10	LVDS1-D1-	I/O
11	LVDS0-D2+	I/O
12	LVDS1-D2+	I/O
13	LVDS0-D2-	I/O
14	LVDS1-D2-	I/O
15	LVDS0-CLK+	I/O
16	LVDS1-CLK+	I/O
17	LVDS0-CLK-	/O
18	LVDS1-CLK-	I/O
19	V-LCD	PWR
20	V-LCD	PWR

A.14 LCD Connector2 (CN15)

Table A.14: LCD Connector2 (CN15)

Part Number	**1653910261**
Description	***CONN. SMD 10*2P 180D(M) DF13-20DP-1.25V HRS**

Pin	Pin Name	Signal Type
1	GND	GND
2	GND	GND
3	D24	I/O
4	D25	I/O
5	D26	I/O
6	D27	I/O
7	D28	I/O
8	D29	I/O
9	D30	I/O
10	D31	I/O
11	D32	I/O
12	D33	I/O
13	D34	I/O
14	D35	I/O
15	GND	GND
16	GND	GND
17	NC	
18	SMB-CLK	CLK
19	RST-TV	IN
20	SMB-DAT	I/O

A.15 Inverter (CN16)

Table A.15: Inverter (CN16)

Part Number	**1655305020**
Description	**Wafer box 2.0mm 5P 180D MALE W/LOCK**

Pin	Pin Name	Signal Type
1	+12V	PWR
2	GND	GND
3	ENABKL	OUT
4	VBR	OD
5	N16675769	PWR

A.16 VGA (CN17)

Table A.16: VGA (CN17)

Part Number	**1654000055**
Description	**D-SUB CONN. 15P 90D(F) DIP 070242FR015S200ZU**

Pin	Pin Name	Signal Type
1	VGA-R	OUT
2	VGA-G	OUT
3	VGA-B	OUT
4	NC	
5	GND	GND
6	GND	GND
7	GND	GND
8	GND	GND
9	+5V-CRT	PWR
10	GND	GND
11	NC	
12	VGA-DDAT	OD I/O
13	VGA-HS	OUT
14	VGA-VS	OUT
15	VGA-DCLK	OD I/O
16	GND	GND
17	GND	GND

A.17 IrDA (SIP) (CN18)

Table A.17: SIP CON. (CN18)		
Part Number	**1655305020**	
Description	**Wafer box 2.0mm 5P 180D MALE W/LOCK**	
Pin	**Pin Name**	**Signal Type**
1	+5V	PWR
2	NC	
3	SIR-IRRX	IN
4	GND	GND
5	SIR-IRTX	OUT

A.18 USB 1/2, USB 3/4 (CN29, CN30)

Table A.18: USB 1/2, USB 3/4 (CN29, CN30)		
Part Number	**1653005260**	
Description	**Pin Header 5*2P 180D(M) 2.0mm SMD IDIOT-Proof**	
Pin	**Pin Name**	**Signal Type**
1	+5 V	PWR
2	+5 V	PWR
3	P1-	I/O
4	P2-	I/O
5	P1+	I/O
6	P2+	I/O
7	GND	GND
8	GND	GND
9	GND	GND
10	NC	

A.19 Keyboard / Mouse (CN20)

Table A.19: Keyboard / Mouse (CN20)

Part Number	**1654606203**
Description	**Mini DIN 6P 90D(F) D Short body W/Shielding W/Pb**

Pin	Pin Name	Signal Type
1	KB-DAT	I/O
2	MS-DAT	I/O
3	GND	GND
4	+5V	PWR
5	KB-CLK	CLK
6	MS-CLK	CLK
7	GND	GND
8	GND	GND
9	GND	GND

A.20 COM1 (CN21)

Table A.20: COM1 (CN21)		
Part Number	**1654000056**	
Description	**D-SUB CONN 9P 90D(M) DIP 070241 MR009 S200ZU SUYIN**	
Pin	**Pin Name**	**Signal Type**
1	DCD#	IN
2	RXD#	IN
3	TXD#	OUT
4	DTR#	I/O
5	GND	GND
6	DSR#	IN
7	RTS#	I/O
8	CTS#	IN
9	RI#	IN
10	NC	
11	NC	
12	GND	GND
13	GND	GND
14	GND	GND
15	GND	GND
16	GND	GND
17	GND	GND
18	GND	GND
19	GND	GND
20	GND	GND
21	GND	GND

A.21 COM2 (CN22)

Table A.21: COM2 (CN22)

Part Number	**1653207260**
Description	**Box Header SMD 7*2P 180DMALE 2.0mm**

Pin	Pin Name	Signal Type
1	DCD#	IN
2	DSR#	IN
3	SIN	IN
4	RTS#	I/O
5	SOUT	OUT
6	CTS#	IN
7	DTR#	I/O
8	RI#	IN
9	GND	GND
10	GND	GND
11	TXD485P-422P	OUT
12	TXD485N-422N	OUT
13	RXD422P	IN
14	RXD422N	IN

A.22 Print Port (CN23)

Table A.22: Print Port (CN23)		
Part Number	**1653213260**	
Description	**Box Header 13*2P 180D(M) 2.0mm SMD**	
Pin	**Pin Name**	**Signal Type**
1	STB#	OUT
2	AFD#	OUT
3	PD0	I/O
4	ERR#	IN
5	PD1	I/O
6	INIT#	OUT
7	PD2	I/O
8	SLIN#	OUT
9	PD3	I/O
10	GND	GND
11	PD4	I/O
12	GND	GND
13	PD5	I/O
14	GND	GND
15	PD6	I/O
16	GND	GND
17	PD7	I/O
18	GND	GND
19	ACK#	IN
20	GND	GND
21	BUSY	IN
22	GND	GND
23	PE	IN
24	GND	GND
25	SLCT	IN
26	NC	

A.23 LAN1 (CN24)

Table A.23: LAN1 (CN24)

Part Number	**1652508200**
Description	**Phone Jack RJ-45 8P 90D(F) DIP 677-088-D06**

Pin	Pin Name	Signal Type
1	LAN1-TX+	OUT
2	LAN1-TX-	OUT
3	LAN1-RX+	IN
4	LAN1-LCT	I/O
5	LAN1-LCT	I/O
6	LAN1-RX-	IN
7	LAN1-LCT	I/O
8	LAN1-LCT	I/O
11	GND	GND
12	GND	GND

A.24 MiniPCI (CN25)

Table A.24: MiniPCI (CN25)		
Part Number	**1652508200**	
Description	**Mini PCI 124PIN 180D(F) SMD TYPE 3 H=7.95mm**	
Pin	**Pin Name**	**Signal Type**
1	NC	NC
2	NC	NC
3	NC	NC
4	NC	NC
5	NC	NC
6	NC	NC
7	NC	NC
8	NC	NC
11	NC	NC
12	NC	NC
13	NC	NC
14	NC	NC
15	NC	NC
16	NC	NC
17	INTC	O-D
18	+5V	PWR
19	+3.3V	PWR
20	INTB	O-D
21	NC	NC
22	NC	NC
23	GND	GND
24	+3.3VSB	PWR
25	PCI_CLK	CLK
26	PCI_RST	IN
27	GND	GND
28	+3.3V	PWR

Table A.24: MiniPCI (CN25)		
Part Number	**1652508200**	
Description	**Mini PCI 124PIN 180D(F) SMD TYPE 3 H=7.95mm**	
Pin	**Pin Name**	**Signal Type**
29	REQ	IN
30	GND	GND
31	+3.3V	PWR
32	GND	GND
33	AD31	I/O
34	PME	O-D
35	AD29	I/O
36	NC	NC
37	GND	GND
38	AD30	I/O
39	AD27	I/O
40	+3.3V	PWR
41	AD25	I/O
42	AD28	I/O
43	NC	NC
44	AD26	I/O
45	C/BE3	I/O
46	AD24	I/O
47	AD23	I/O
48	IDSEL	IN
49	GND	GND
50	GND	GND
51	AD21	I/O
52	AD22	I/O
53	AD19	I/O
54	AD20	I/O
55	GND	GND
56	PAR	I/O

Table A.24: MiniPCI (CN25)		
Part Number	**1652508200**	
Description	**Mini PCI 124PIN 180D(F) SMD TYPE 3 H=7.95mm**	
Pin	**Pin Name**	**Signal Type**
57	AD17	I/O
58	AD18	I/O
59	C/BE2	I/O
60	AD16	I/O
61	IRDY	I/O
62	GND	GND
63	+3.3V	PWR
64	FRAME	I/O
65	CLKRUN	IN
66	TRDY	I/O
67	SERR	O-D
68	STOP	I/O
69	GND	GND
70	+3.3V	PWR
71	GND	GND
72	DEVSEL	I/O
73	C/BE1	I/O
74	GND	GND
75	AD14	I/O
76	AD15	I/O
77	GND	GND
78	AD13	I/O
79	AD12	I/O
80	AD11	I/O
81	AD10	I/O
82	GND	GND
83	GND	GND
84	AD9	I/O

Table A.24: MiniPCI (CN25)		
Part Number	**1652508200**	
Description	**Mini PCI 124PIN 180D(F) SMD TYPE 3 H=7.95mm**	
Pin	**Pin Name**	**Signal Type**
85	AD8	I/O
86	C/BE0	I/O
87	AD7	I/O
88	+3.3V	PWR
89	+3.3V	PWR
90	AD6	I/O
91	AD5	I/O
92	AD4	I/O
93	NC	NC
94	AD2	I/O
95	AD3	I/O
96	AD0	I/O
97	+5V	PWR
98	NC	NC
99	AD1	I/O
100	NC	NC
101	GND	GND
102	GND	GND
103	NC	NC
104	NC	NC
105	NC	NC
106	NC	NC
107	NC	NC
108	NC	NC
109	NC	NC
110	NC	NC
111	NC	NC
112	NC	NC

Table A.24: MiniPCI (CN25)		
Part Number	**1652508200**	
Description	**Mini PCI 124PIN 180D(F) SMD TYPE 3 H=7.95mm**	
Pin	**Pin Name**	**Signal Type**
113	NC	NC
114	GND	GND
115	NC	NC
116	NC	NC
117	NC	NC
118	NC	NC
119	NC	NC
120	NC	NC
121	NC	NC
122	NC	NC
123	NC	NC
124	+3.3V_AUX	PWR

A.25 Audio (CN26)

Table A.25: Audio (CN26)

Part Number	**1653005261**
Description	**Pin Header SMD 5*2P 180D(M) 2.0mm**

Pin	Pin Name	Signal Type
1	LOUT_R	OUT
2	LIN_R	IN
3	GND	GND
4	GND	GND
5	LOUT_L	OUT
6	LIN_L	IN
7	GND	GND
8	GND	GND
9	MIC1	IN
10	MIC2	IN

A.26 GPIO (CN27)

Table A.26: GPIO (CN27)		
Part Number	**1653005261**	
Description	**Pin Header SMD 5*2P 180D(M) 2.0mm**	
Pin	**Pin Name**	**Signal Type**
1	+5V	PWR
2	GPIO4	I/O
3	GPIO0	I/O
4	GPIO5	I/O
5	GPIO1	I/O
6	GPIO6	I/O
7	GPIO2	I/O
8	GPIO7	I/O
9	GPIO3	I/O
10	GND	GND

A.27 SMBus (CN28)

Table A.27: CN28			
CN28	**SMBus**		
Part Number	**1655904020**		
Description	**Wafer,85205-0400,SMT-1.25mm,S/T type,4Pin,180DM**		
Pin	**Pin Name**	**Signal Type**	**Signal Level**
1	GND	GND	
2	SMB_DAT	DATA	+3.3V
3	SMB_CLK	CLK	+3.3V
4	+V5	PWR	+5V

Appendix B

System Assignments

This appendix contains information of a detailed nature. It includes:

- System I/O ports
- 1st MB memory map
- DMA channel assignments
- Interrupt assignments

Appendix B System Assignments

B.1 System I/O Ports

Table B.1: System I/O ports

Addr. range (Hex)	Device
000-01F	DMA controller
020-021	Interrupt controller 1, master
040-05F	8254 timer
060-06F	8042 (keyboard controller)
070-07F	Real-time clock, non-maskable interrupt (NMI) mask
080-09F	DMA page register
0A0-0BF	Interrupt controller 2
0C0-0DF	DMA controller
0F0	Clear math co-processor
0F1	Reset math co-processor
0F8-0FF	Math co-processor
1F0-1F8	Fixed disk
200-207	Reserved (Game I/O)
278-27F	Reserved (Parallel port 2,LTP3)
2E8-2EF	Reserved (Series port 4)
2F8-2FF	Serial port 2
300-31F	Prototype card
360-36F	Reserved
378-37F	Parallel printer port 1 (LPT 2)
380-38F	SDLC, bisynchronous 2
3A0-3AF	Bisynchronous 1
3B0-3BF	Monochrome display and printer adapter (LPT1)
3C0-3CF	Reserved
3D0-3DF	Color/graphics monitor adapter
3E8-3EF	Reserved (Series port 3)
3F0-3F7	Diskette controller
3F8-3FF	Serial port 1

* PNP audio I/O map range from 220 ~ 250H (16 bytes)
  MPU-401 select from 300 ~ 330H (2 bytes)

B.2 1st MB memory map

Table B.2: 1st MB memory map

Addr. range (Hex)	Device
F0000h - FFFFFh	System ROM
*CC000h - EFFFFh	Unused (reserved for Ethernet ROM)
C0000h - CBFFFh	Expansion ROM (for VGA BIOS)
B8000h - BFFFFh	CGA/EGA/VGA text
B0000h - B7FFFh	Unused
A0000h - AFFFFh	EGA/VGA graphics
00000h - 9FFFFh	Base memory

* If Ethernet boot ROM is disabled (Ethernet ROM occupies about 16 KB)

* E0000 - EFFFF is reserved for BIOS POST

B.3 DMA channel assignments

Table B.3: DMA channel assignments

Channel	Function
0	Available
1	Available (audio)
2	Floppy disk (8-bit transfer)
3	Available (parallel port)
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

* Audio DMA select 1, 3, or 5

** Parallel port DMA select 1 (LPT2) or 3 (LPT1)

B.4 Interrupt assignments

Table B.4: Interrupt assignments

Interrupt#	Interrupt source
IRQ 0	Interval timer
IRQ 1	Keyboard
IRQ 2	Interrupt from controller 2 (cascade)
IRQ 3	COM2
IRQ 4	COM1
IRQ 5	Reserved (COM4)
IRQ 6	FDD
IRQ 7	LPT1
IRQ 8	RTC
IRQ 9	Reserved (audio)
IRQ 10	Reserved (COM3)
IRQ 11	Reserved for watchdog timer
IRQ 12	PS/2 mouse
IRQ 13	INT from co-processor
IRQ 14	Primary IDE
IRQ 15	Secondary IDE for CFC

* Ethernet interface IRQ select: 9, 11, 15
* PNP audio IRQ select: 9, 11, 15
* PNP USB IRQ select: 9, 11, 15
* PNP ACPI IRQ select: 9, 11, 15

Appendix C

Mechanical Drawings

Appendix C Mechanical Drawings

C.1 Mechanical Drawings

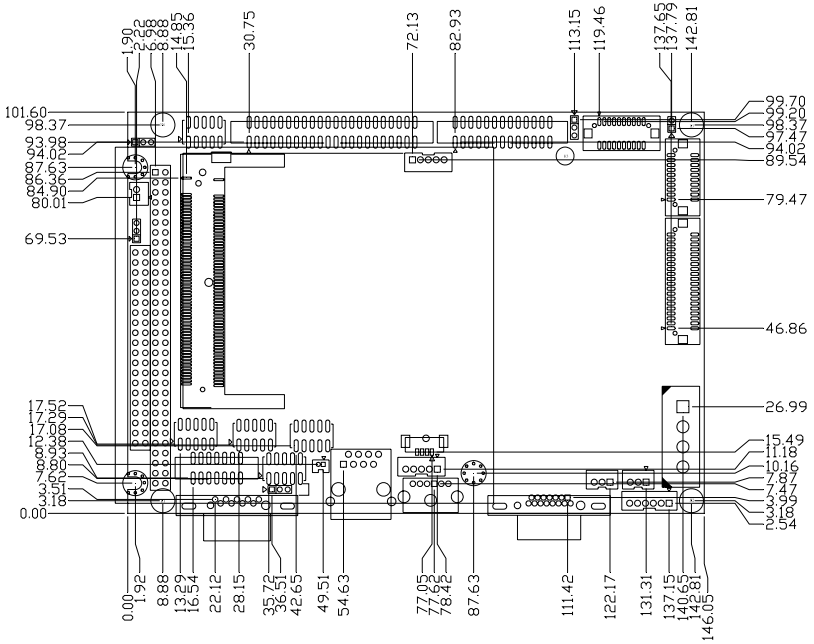


Figure C.1: PCM-9377 Mechanical Drawing (Component Side)

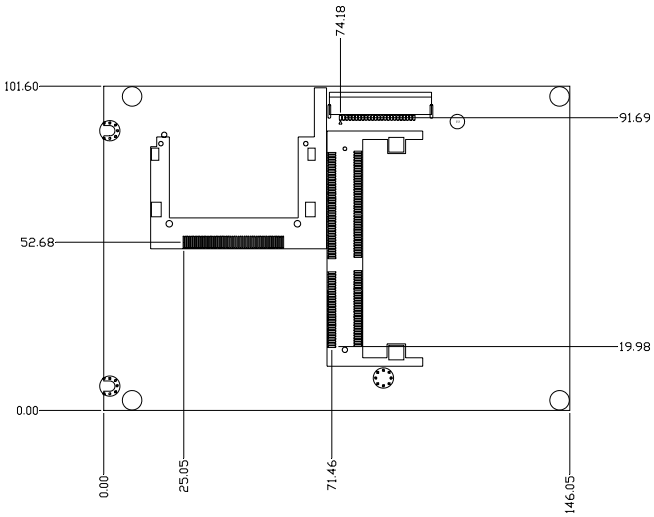


Figure C.2: PCM-9377 Mechanical Drawing (Solder Side)